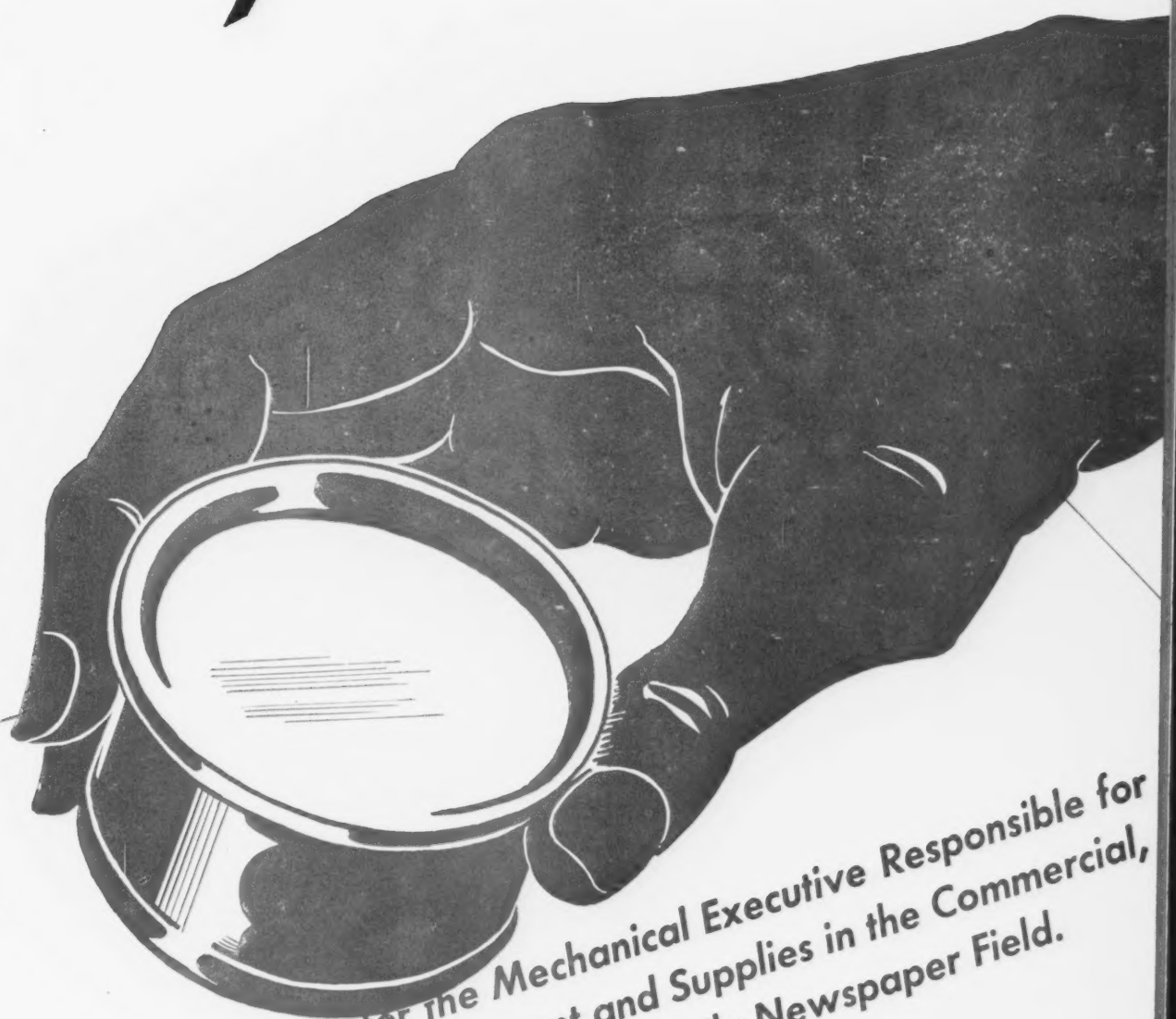
PRINTING EQUIPMENT *Engineer*



A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field.

FEBRUARY, 1943

an undying Imprint

No other personality in all history has left its imprint more indelibly upon community growth and National spirit than the *printer*. Courageous and optimistic, he pioneered for education and enlightenment and all the advantages which they bring. He spurred civic pride, fought for law and order, opened a fertile field for initiative and earning power. He gave new impetus to business effort. He left cherished traditions. In many instances, America can thank the printing craft for her wholesome ways of life. ★ And like the Minute Men of early days, the printers of today must be alive to the message inscribed upon the printed page—the reason for it, its purpose and desired influence. Only by such genuine interest can they live up to ideals and further the highest efficiency in our war effort. Whatever the National objective, the printer can simplify the means.

HARRIS • SEYBOLD • POTTER • COMPANY

HARRIS DIVISION
CLEVELAND, OHIO
MANUFACTURERS OF OFFSET LITHOGRAPHIC • LETTERPRESS AND GRAVURE PRINTING MACHINERY • • • • • •

SEYBOLD DIVISION
DAYTON, OHIO
MANUFACTURERS OF PAPER CUTTERS AND TRIMMERS • KNIFE GRINDERS • DIE PRESSES • WRIGHT DRILLS • MORRISON STITCHERS

10 Reasons Why Wartime Printers Value the LUDLOW

Printers operating under wartime conditions are realizing the true worth of Ludlow equipment. Facing new demands under time and labor handicaps, printers are finding that Ludlow short-cuts and efficiencies speed up the production of all the kinds of printing which are so necessary to the war effort. Among the important values of Ludlow equipment are—

- **Production Efficiency**—Produces job and display composition efficiently by eliminating a number of unnecessary operations.
- **Economically Operated**—Conserves time, supplies and type metal; it also saves floor space.
- **Dependability of Equipment**—Freedom from mechanical troubles—resulting from simplicity and reliability of mechanism.
- **Range of Product**—One simple machine casts typefaces from 4 to 96 pt. (and up to 240 pt. as single characters), borders, ornaments, rules from ruleblocks, etc.
- **Ruleform Composition**—An economical, simple and positive system for producing ruleforms.
- **Printing Economies**—Multiple forms save press work, all-slug make-up and lock-up save time, printing from all-slug forms speeds up presswork.
- **Special Features**—Self-quadding and self-centering with special sticks. Low-quadding is standard, high-quadding from recessed space matrices. Different point-sizes cast on same slug in varied alignments.
- **Unlimited Type Supply**—Unrestricted capacity without casting sorts or storing type in advance of setting, buying outside of plant, or depending upon transportation for essential composing room materials.
- **Manpower**—Any competent compositor can quickly learn to operate the Ludlow without an extended training period—important for fullest utilization of manpower.
- **Ludlow Organization**—Machine and equipment backed by a progressive business and service organization. Any necessary parts and supplies will be available just as long as conditions permit.

Please feel free to ask us for suggestions about how to obtain the maximum usefulness, efficiency and service from your Ludlow and Elrod equipments.

LUDLOW TYPOGRAPH COMPANY

2032 Clybourn Avenue + + + Chicago, Illinois

Set in members of the Ludlow Karnak family

Popular Developments

THE army requested Duplex engineers to design new type artillery weapons. Tool room models were produced and after exhaustive tests at proving grounds contracts were placed for fabrication and Duplex completed another order ahead of schedule.

The above facts prove that the skilled force of engineers maintained by Duplex will offer the trade the most modern "Victory Press Designs" in the world.

THE DUPLEX PRINTING PRESS COMPANY

BATTLE CREEK, MICHIGAN

Awarded the Army-Navy "E" For Quality Production

ipi Keeping in Touch ipi

PREPARED BY INTERNATIONAL PRINTING INK DIVISION OF INTERCHEMICAL CORPORATION • FEBRUARY, 1943

NEW ORDER ASSURES COLOR

Inks Available for All Normal Needs

Quality and Performance Not Affected, Often Improved

Printers should have no difficulty in meeting normal requirements for color printing in the immediate future. Under the new dyestuff and organic pigment order issued the 21st of January, supplies of all colors and all types of inks will be satisfactory.

There will be plenty of reds, oranges, yellows, greens, blues, purples, browns and blacks to produce the color printing needed to keep the wheels of trade turning and to bolster civilian morale. If you want a technical explanation we can give it to you, but the safer procedure is to consult your ink maker. No IPI customer has suffered unduly as yet.

Gold Bronze

A recent amendment leaves any manufacturer free to sell any gold bronze on hand and our customers are free to use it.

Inks for Aniline Printing

Tannic acid may not be made from nutgalls for other than medicinal purposes. Shellac is now scarce and high in price. IPI Anilox inks are formulated without these ingredients and are superior to conventional inks.

Excellent Halftone Blacks

New formulation not using restricted resins is IPI's new Holdfast-extra. It is superior in non-scratch characteristics, produces fine printing results. Printers are reporting remarkable successes with IPI Holdfast-extra.

News Inks

Supplies are easy. Materials required in the manufacture of news inks are ample and supplies should meet all normal requirements. White pigments are also plentiful.

Everyday Inks Still Perform

Printers have told us that IPI Everyday inks still do much more than they expect. In thousands of pressrooms, especially on automatic presses, they have demonstrated their performance. Moderate in price, Everyday inks are made today under the same controls as before.

Manpower and Transportation Problems

The War Manpower Commission program may further affect ink manufacturers. At IPI women have replaced men in service as laboratory assistants, color matchers and labelers.

Printers are cooperating on transportation which has become one of the most serious problems in the ink manufacturing industry. It will probably become much worse before it becomes better. Our factories must bring in raw materials in sufficient quantities to maintain production and at the same time keep inventories within the regulations. Shipments now take 2 to 3 times longer. Deliveries to printers are affected by regulations limiting the number of trips.

Most printers are cooperating with the ink manufacturer by ordering as large a supply as possible at one time within the W.P.B.'s inventory regulation. This greatly helps to ease our delivery problem.

NEW PACKAGING MATERIALS

Replacement Needs Offer Opportunities in New Fields

The urgent demand for replacement materials is stimulating the development of new products, not only to replace conventional needs but to meet entirely new markets. Most conspicuous is the revolution taking place in the field of packaging. Changes in types of packaging are shifting whole markets into new channels. A large section of the packaging business is moving from the metal decorator to the paper box and container manufacturer.

For the expanding dehydrated foods industry, IPI has developed laminants and adhesives which give packages moisture-proofness, moisture vapor resistance and grease-proofness. Above, dehydrated equivalents in front of natural vegetables show why they take up 90% less space in transportation.

Paper Meets the Challenge

These new paper packages require new types of materials to make them moisture-proof, grease-proof, resistant to moisture vapor transmission; and they demand ingenious designing to attain satisfactory rigidity and strength. In addition, they must be capable of use on existing machinery and equipment not only for fabrication but in filling.

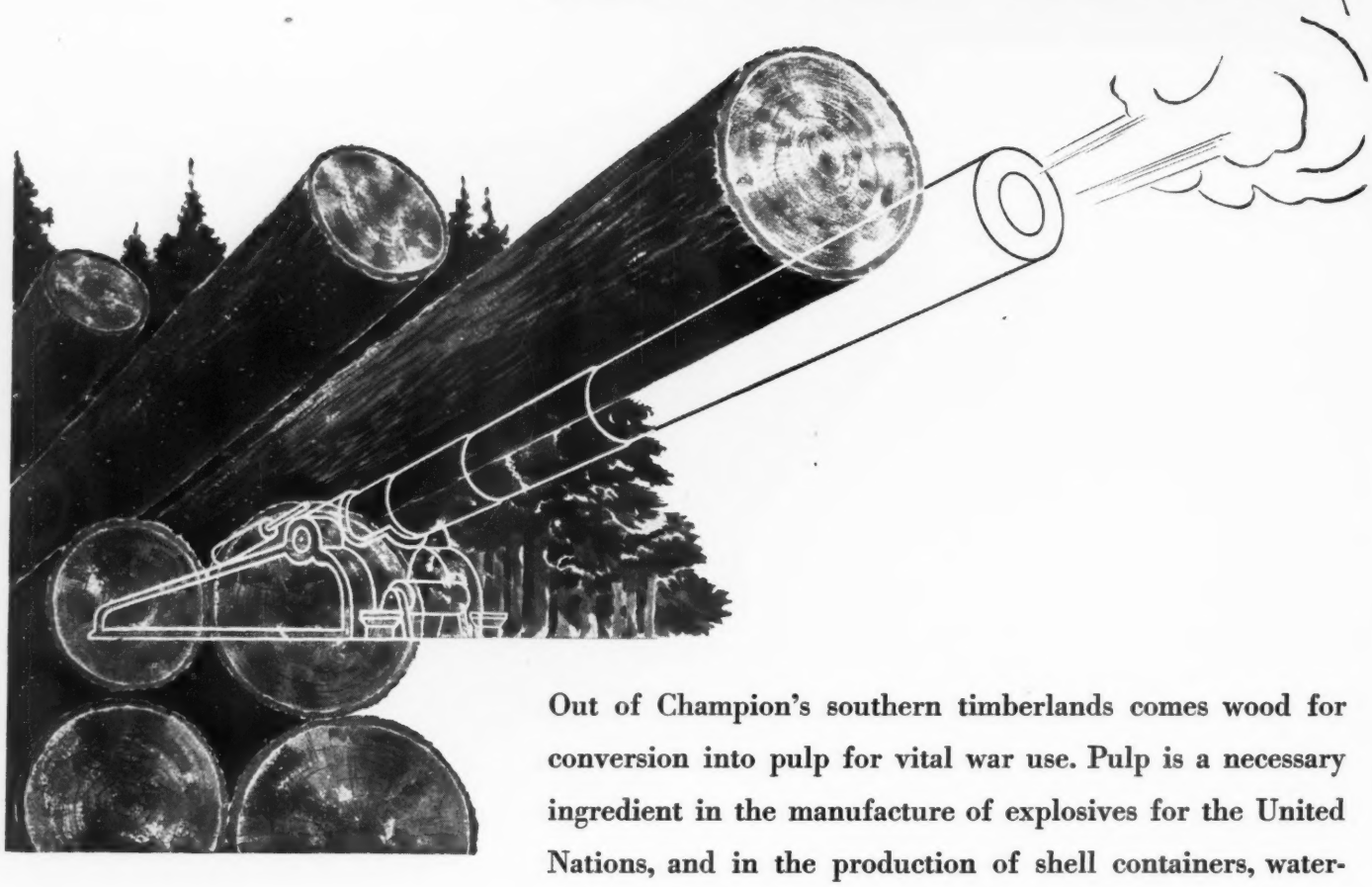
The ink maker always has been in touch with packaging problems and requirements. IPI has devoted a large part of its research program to the development of moisture-resistant and grease-proof laminants and adhesives.

Each packaging problem must be solved for its particular purpose. No ready-made materials will meet every need. If you have a packaging problem we suggest that you get in touch with IPI and investigate some of the new laminants and adhesives which have been developed from available materials.

For further information on these new products, write to International Printing Ink, 75 Varick St., New York, N. Y.

Munitions . . .

IN THE RAW



Out of Champion's southern timberlands comes wood for conversion into pulp for vital war use. Pulp is a necessary ingredient in the manufacture of explosives for the United Nations, and in the production of shell containers, waterproof wrapping for mechanical parts and food, and other necessities for fighting men. Pulp and paper take a most important place, too, as substitute materials for certain critical metals. With roaring, battering guns, and with the gentler persuasion of the printed page, Champion pulp and paper continue to fight a tough, winning battle for America.

THE CHAMPION PAPER AND FIBRE CO., Hamilton, Ohio

MILLS AT HAMILTON, OHIO . . . CANTON, N. C. . . . HOUSTON, TEXAS

Manufacturers of Advertisers' and Publishers' Coated and Uncoated Papers, Cardboards, Bonds, Envelope and Tablet Writing . . . 2,000,000 Pounds a Day

DISTRICT SALES OFFICES

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TECHNICAL BOOKS

- **STANDARD BOOK ON ESTIMATING for PRINTERS —By Fred W. Hoch.** Revised 1941 edition. This book is a primer for students and a reference for printers and estimators. Every printing plant should have a copy. Author explains all operations in commercial printing plant and shows production time allowance for each in hours and decimal hours. Size, 6 in. by 9¼ in., 268 pages, $3.75 per copy, cash with order.
- **PRINTING INKS** — Their Chemistry and Technology **—By Carleton Ellis.** Bound in cloth, 6 in. by 9½ in., 560 pages, well illustrated. For printing executives, pressmen, photo-engravers, platemakers, ink manufacturers, chemists, paper-makers. Author stays close to printing plant. The solving of new production problems brought about by technological improvements, both in equipment and inks, created the urgent need for this book. Price $7, cash with order.
- **THE PRACTICE OF PRESSWORK—By Craig R. Spicher.** We offer copies to our readers, at the special price of $4.00 per copy, cash with order. No printer should be without a copy (9000 copies printed).
- **LITHOGRAPHER'S MANUAL—Compiled by Walter E. Soderstrom.** Second revised edition. Technical information from copy to finished job. Nationally known technical men contributed the bulk of practical camera, platemaking and presswork information. Size 8½ in. by 11¼ in. Bound in red cloth, gold stamped. Many of the 368 pages are illustrated. Price $5 per copy, cash with order.
- **PHOTOGRAVURE—By H. Mills Cartwright.** Covers all of photogravure's basic principles in concise and readable language. Rotogravure receives minor discussion but this is generally considered best textbook on photogravure process. Contains 202 pages, 34 illustrations, maroon cloth, size 6¼ in. by 9¼ in., $3.50 per copy. cash with order.
- **MANUAL OF STEREOTYPING — By Joseph Goggin.** This 256-page book conveys technical information and manipulating procedure. Written by a practical stereotyper. Price $5.00, cash with order.
- **PRESSROOM PROBLEMS AND ANSWERS — By Fred W. Hoch.** Might be considered a miniature encyclopedia since it contains answers to 334 pressroom problems which have been answered by Mr. Hoch. Written in language of journeyman pressman. Pressmen, production men, paper and ink manufacturers, electrotypers and photo-engravers will find this book of high utility when pressroom problems arise in which tendency is to lay blame on furnished materials used in pressroom production. Size, 6 in. by 9¼ in., 258 pages, gold stamped blue cloth. Price, $3 per copy, cash with order.
- **HOW TO ADJUST WORK-UPS — By Wm. H. Lichter and Geo. F. Smalley.** Booklet consists of 24 pages in which are analyzed and remedies are given for prevention and/or elimination of work-ups. Material written as result of actual plant experience. Size, 5¼ in. by 7¼ in. Price, $1 per copy, cash with order.
- **HANDBOOK FOR PRESSMEN — By Fred W. Hoch.** Book written by authority on all phases of flat-bed letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts, $3 per copy, cash with order.

Send All Orders With Remittance to

PRINTING EQUIPMENT Engineer

1276 W. Third Street
Cleveland, Ohio

Printing Equipment Engineer

Leading Articles, February 1943

Momentum Utilized as Roll-Braking Power 17
FRANK MILNE

Typographic Shadow Boxes Conserve Zinc 18

Essentialize Your Printing 21

Crystallization of Printing Inks 23
RONALD J. McEACHEN

Printing Patents Report 27

War Production Board News 28

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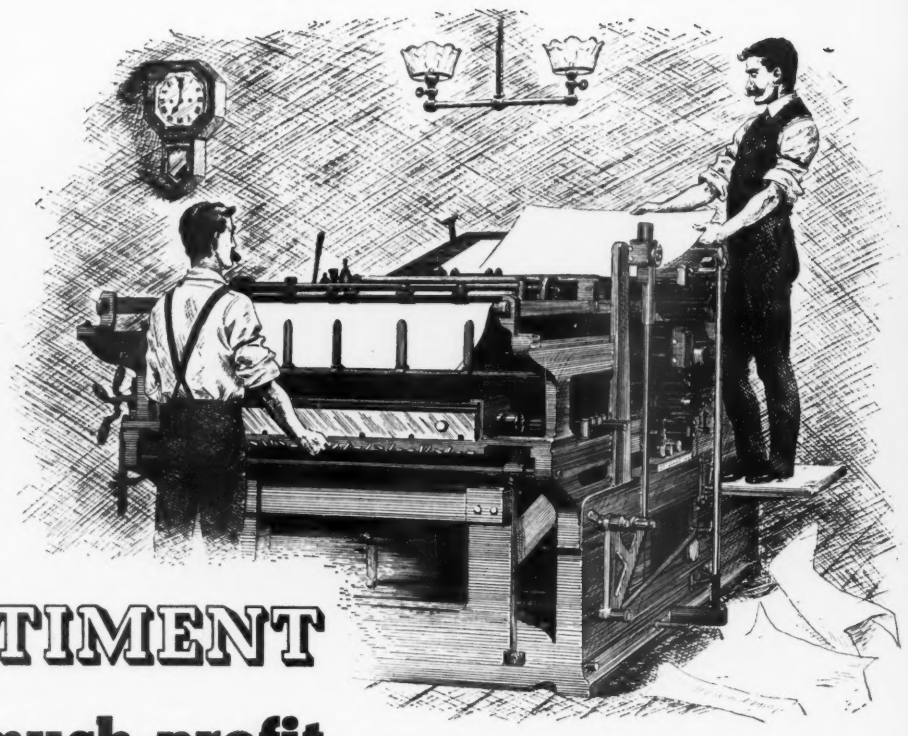
ALBERT B. KRANZ

PRINTING EQUIPMENT Engineer, a monthly publication, Volume 65, No. 5. Published at 1276 West Third St., Cleveland, Ohio, February, 1943. – MacD. Sinclair, Editor. Adam Henri Reiser, Associate Editor. John E. Cobb and J. Homer Winkler, Contributing Editors. – Don Will, Publisher. Western Representative E. P. Bloomster, 232 East Erie St., Chicago, Ill., phone SUperior 2444. Copyright 1943 by The Willsea Pub. Co. – Subscription price per year, $3.50 in advance in U. S. A. Single copy current issues, 35c. Feature issues, $1.00. December Equipment and Supplies Catalog Issue, $1.00. Subscriptions in foreign countries, $4.50 in advance, U. S. currency. – Printed in U. S. A.

MEMBER CONTROLLED CCA CIRCULATION AUDIT



MUCH SENTIMENT

. . . but not much profit

REMEMBER way back when that grand old cylinder was new and shiny—and efficient? Even today, the old machine can turn out a slow sheet or two on an easy "customer's accommodation" job. But it has no place in a modern, war-time world. National need affords an honorable retirement for it and for all old printing machinery, no matter how sentimentally valuable.

Send it to fight Hitler and the Japs!

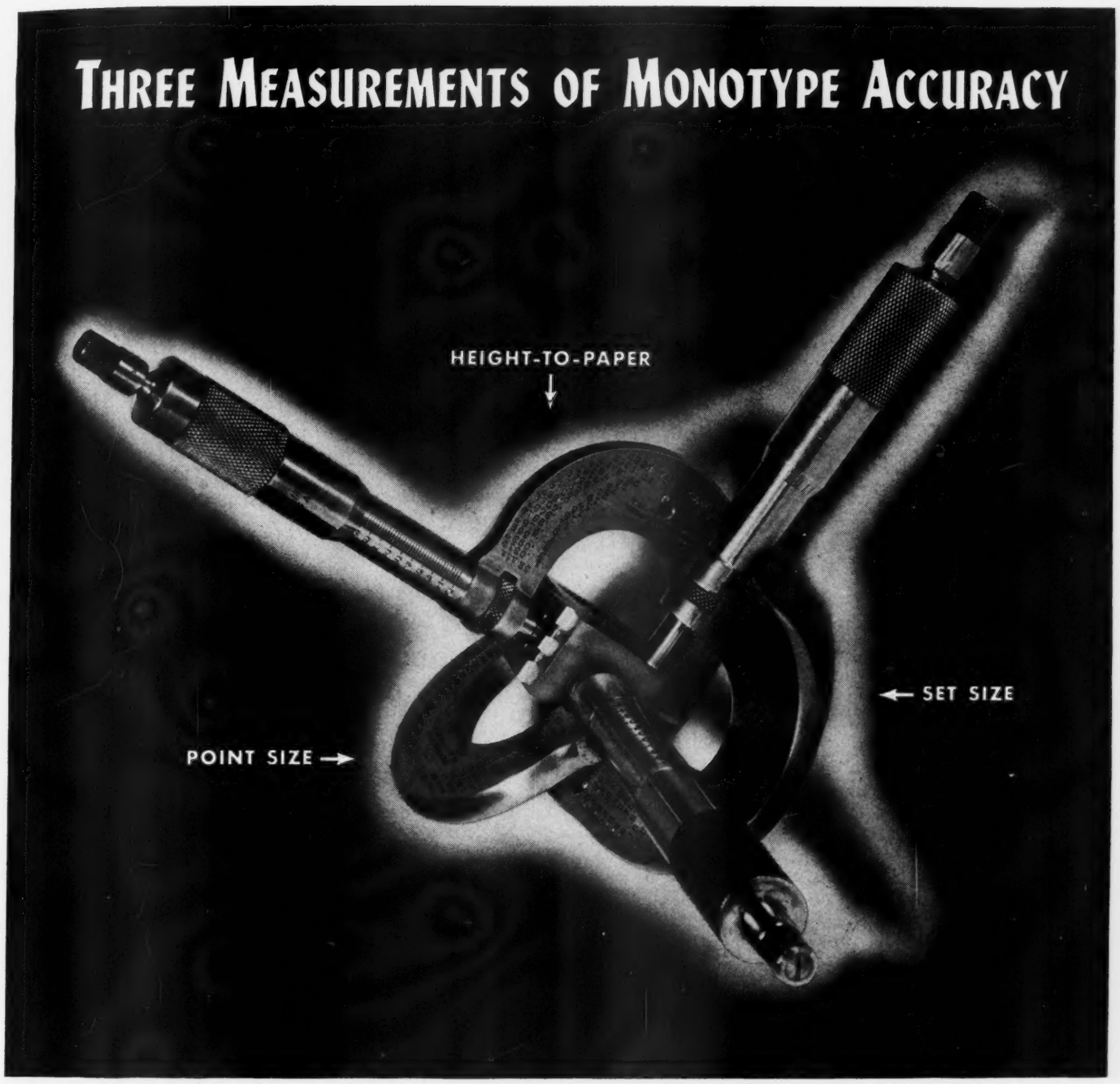
Those cylinders and frames will boom along much more effectively as guns, tanks or other armament—and there's a patriotic satisfaction in so practical an end for an old friend.

The Miller War-Time Scrap Allowance Plan is the printing industry's own means of contributing scrap machinery, with multiple benefits to business and industry. For details, write.

Miller Printing Machinery Co.

Pittsburgh, Pa.

THREE MEASUREMENTS OF MONOTYPE ACCURACY



The Height-to-Paper, the Point Size and Set Size of each letter and character of Monotype-cast type, either machine or hand set, is determined by one factor only: the dimensions of the mold opening. Since Monotype-cast type are made singly, it therefore necessarily follows that these important dimensions will be always accurate, with no high nor low letters over the entire length of each and every line.

Precision Is a Built-In Monotype Feature

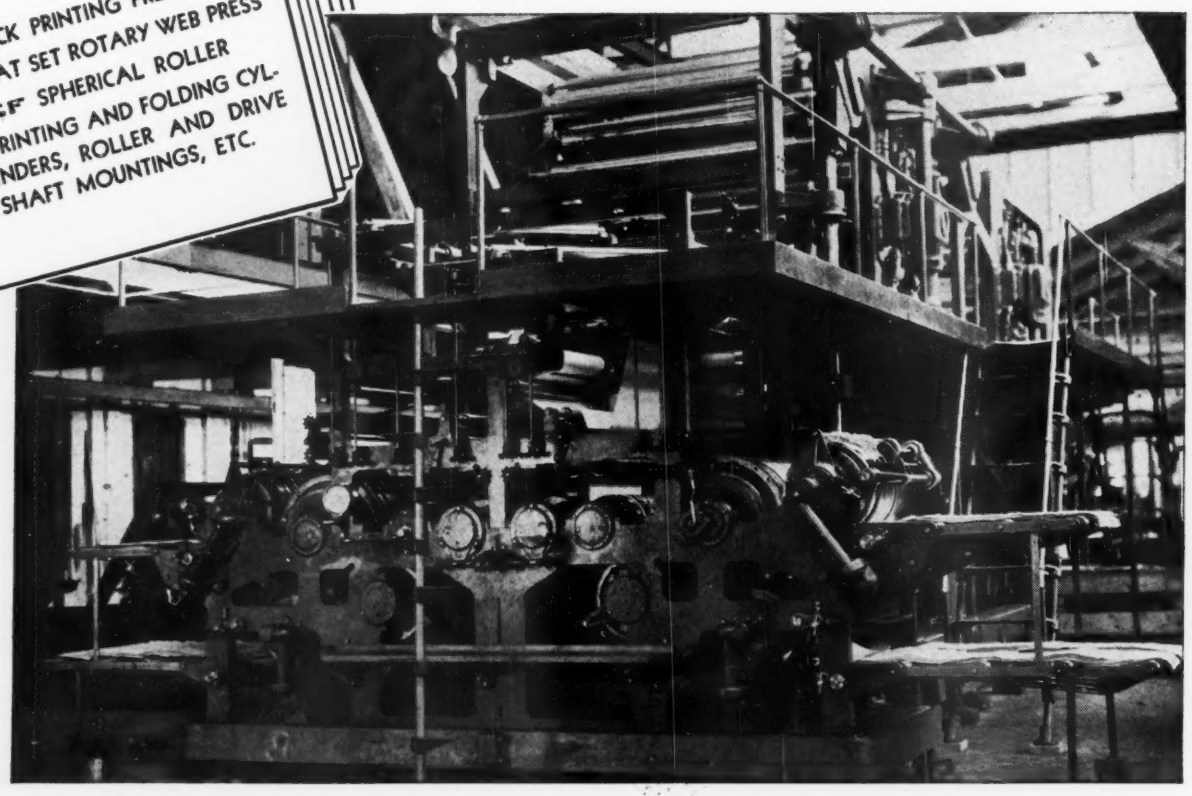
LANSTON MONOTYPE MACHINE COMPANY

MONOTYPE BUILDING, TWENTY-FOURTH AT LOCUST STREET, PHILADELPHIA, PENNA.

Composed in the Monotype 20th Century Family—Heading in Monotype Valiant, No. 412

APPLICATION

Mfr. BABCOCK PRINTING PRESS CORP.
Machine HEAT SET ROTARY WEB PRESS
Bearing SKF SPHERICAL ROLLER
Locations PRINTING AND FOLDING CYLINDERS, ROLLER AND DRIVE SHAFT MOUNTINGS, ETC.



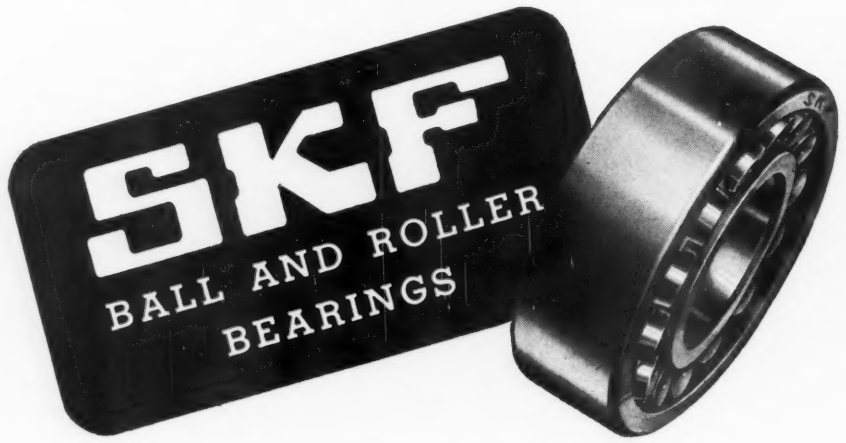
PRESSES *don't stop for Wear*

WITH SKF BEARINGS

On the vital rotating parts of this Babcock Rotary Web Press, Wear is checked by SKF Bearings. Checked by self-alignment which compensates for deflections without binding. Checked by close tolerances maintained throughout a long life. Checked by extremely smooth-running characteristics. As a result, there's *cylinder rigidity*, both axially and radially, to insure accurate register and impressions. There's *low friction* for low starting torque and quick pick-up. There's the certainty of making the "run" without stopping for bearing trouble. Thanks to modern engineering, Wear meets its match when it meets an SKF. 5214

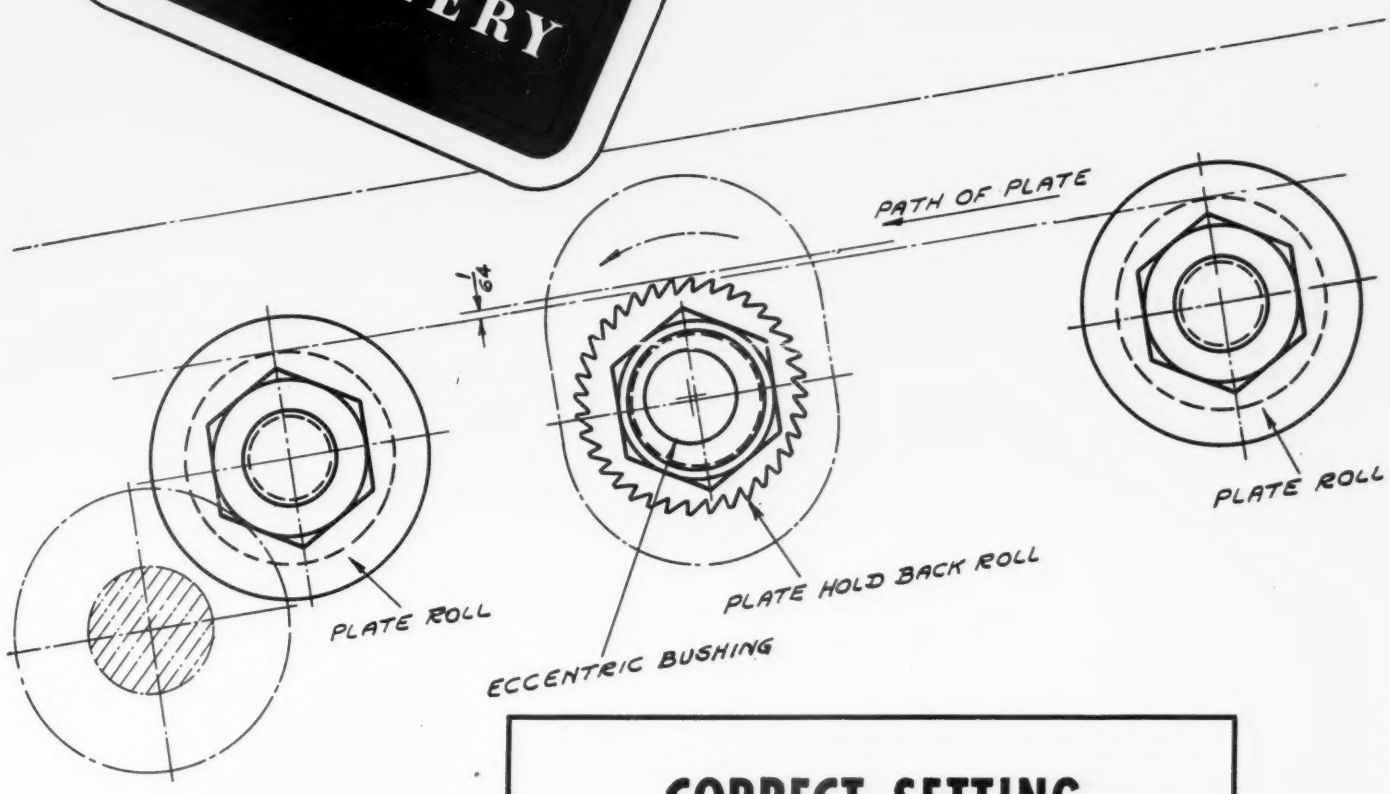
SKF INDUSTRIES, INC., PHILADELPHIA, PENNA.

ARMY E NAVY



Wood
NEWSPAPER
MACHINERY

Maintenance Suggestion for **STANDARD** *and* **HEAVY-DUTY** *Autoshavers*



CORRECT SETTING OF PLATE HOLD-BACK ROLLS

On both Standard and Heavy-Duty Autoshavers, it is important to keep the *top* of the "hold-back" ratchet rolls 1/64 *inch Higher* than the top of the plate rolls.

On the *Standard Autoshaver*, correct setting is accomplished simply by turning the eccentric bush, as shown above.

On the *Heavy-Duty* Autoshaver the adjustment (not shown), is made by moving the *lever* which controls the entire hold-back roller-unit.

If you need more maintenance information on Autoshavers, or other Wood equipment, please write the Engineering Department at Plainfield, New Jersey. Wood Newspaper Machinery Corporation. New York Office: 501 Fifth Avenue.

Save this page. File it with previous maintenance hints. More will follow.

GET THE
Maximum Output
FROM EVERY PRESS
ALL OUT war effort demands that there be no waste of machine or man hours in the printing plant.
The highest possible running speed, consistent with good printing, and minimum makeready, means maximum press production. This can be had only when rollers are in good condition, in season, and made properly for the press on which they are to be used.
Pressmen prefer Bingham Rollers because they do a good inking job, are tough, consistently hold their surface, and keep their shape.
If you want to get more good impressions without waste of man power or press time, consult your nearest Bingham representative. He will gladly help you on any roller problem.
SAM'L BINGHAM'S SON MFG. CO.
Roller Makers Since 1847
Manufacturers of Printers' and Litho-Offset Rollers
CHICAGO
Atlanta
Cleveland
Dallas
Des Moines
Detroit
Houston
Indianapolis
Kalamazoo
Kansas City
Minneapolis
Nashville
Oklahoma City
Pittsburgh
St. Louis
Springfield, O.

★ When Mr. America buys his daily newspaper, he *knows* what he's after. He wants the complete news . . . all the dramatic details of the subject which holds his greatest interest . . . the fortunes of his own country as it fights a global war.

What he *does not know* is the great volume of energy and resourcefulness on the part of the personnel of his favorite newspaper that are required to deliver the news . . . and especially so in time of war.

A large share of the burden of satisfying Mr. America's craving for news rests in the Mechanical Departments where, in many cases, they are doing it with equipment that in normal times would have been replaced. Here we see conspicuous examples of resourceful craftsmen striving every day to meet circulation schedules.

They know that since press manufacturers are so completely occupied with the production of urgently required war materials, they must carefully maintain each piece of existing equipment, taking every precaution to extend its useful life for the duration so that, insofar as they are concerned, Mr. America, as he continues to read his daily paper, will never know the difference.

R. HOE & CO. INC. 910 EAST 138TH STREET
BOSTON SAN FRANCISCO CHICAGO BIRMINGHAM (at East River) NEW YORK

ARMY E NAVY
Awarded for High Achievement

TODAY'S INSPECTION

may be tomorrow's life saver

The American soldier in battle doesn't take things for granted when it comes to his weapons. He keeps his gun cleaned, oiled, and in perfect condition. He knows his very life may depend upon regular inspection of that gun.

In these times type metal users can take a lesson from the soldier. Your life is not at stake but your metal supply may be jeopardized if you do not see to it that it gets a regular inspection —that means regular type metal analysis by Imperial.

Wartime regulations and restrictions on type metal preclude carelessness. Be prepared! Place your type metal dependence on Imperial —Switch to the Plus Plan—Have your metal analyzed and cared for systematically. You thus experience in your operations perfect metal balance, with minimum casting temperatures and minimum dross. Result: Lower fuel bills, fewer production stops, and lower yearly metal costs.

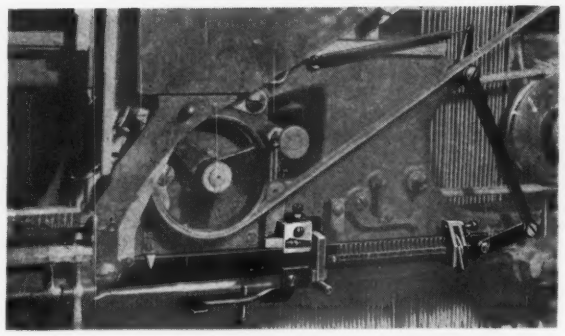
IMPERIAL TYPE METAL CO.

Serving The Graphic Arts Industry Only

PHILADELPHIA NEW YORK CHICAGO

Imperial

IMPROVED ASSEMBLER SLIDE, CLAMP & BRAKE



● When you begin to realize that the "shimmying" Assembler Slide Clamp is not normal—when you get rather tired of changing the clamp trigger and springs

● when you want to overcome the "slipping" of the Assembler Slide because of worn brake blocks—order the "STAR" antidote, which consists of two units.

IMPROVED ASSEMBLER SLIDE & CLAMP..... $7.25

IMPROVED ASSEMBLER BRAKE & BRACKET..... 7.75

The first unit may be ordered alone.

The second can be used with it.

Both the slide and clamp are far stronger than the conventional parts. No parts to wear out. The wearing surface of the slide is *hardened*.

Put these two items on your machines and you'll bless us.

SENT ON 10 DAY APPROVAL

Precision TRADE ★ MARK Parts

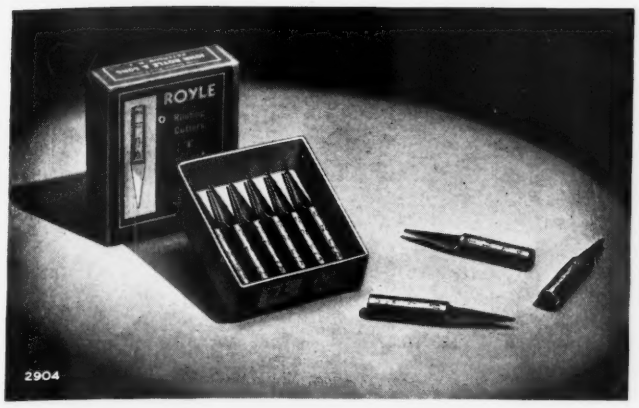
POSITIVE TRACTION — NO STRETCH — LONGER WEAR, MEANS ACE BELTS. For All Places on LINOTYPES and INTERTYPES.

LINOTYPE PARTS COMPANY

WEATHERLY, PA. (Factory and Main Office)

KANSAS CITY 314 West 10th St.

CHICAGO 318 W. Randolph St.
MINNEAPOLIS 503 Fourth Ave., South
DENVER 1441 Blake St.



ROUTING CUTTERS THAT CUT!!

Choose Style According to Use

Styles	*Blade Sections*	*Recommended for*
A		Electrotypes, stereotypes, wood
B		Zinc
C		Brass
D		Electrotypes and copper
E		Copper (Steel at reduced speed)
F		Zinc (Reinforced blade)
G		Brass (Reinforced blade)
H		Copper (Ground below center)
L		Zinc (Long blade)
M		Wood veining (No taper)

All Royle Routing Cutters reflect advantages gained through more than eighty years' experience in making these tools. We promise no miracles, but offer a complete line of cutters in every respect the finest that sound design, fine material and expert workmanship can produce. ***Order Direct Or Through Your Dealer . . . Be Sure It's a Royle.***

Write for catalogue 425

ROUTERS · TRIMMERS
BEVELERS · SAWS

JOHN ROYLE & SONS

8 ESSEX STREET **PATERSON, N. J.**

ZINK CUT CEMENT PRICES in the United States: 75c per large tube; $6.00 per dozen tubes; $5.00 per dozen tubes in gross lots.

Does Not Deform Thin-Gauge Zinc

Booth's Zink Cut Cement is particularly valuable for mounting the 18 and 21 gauge zinc cuts on wood or metal base, in addition to the heretofore standard 16 gauge cuts. This cement will not deform the printing surface of the cut because it is spread out to an extremely thin film. In use, it is extremely economical because it is furnished to you in a convenient tube with applicator nozzle.

Fastens any kind of cut to wood or metal base. Send for a trial tube at 75c if you are not now using it. Smart mechanical executives take advantage of all worthwhile production helps—this cement is one of them.

Booth's Black Rubber Rolls

Keep keyboard cam wheel bearings supplied with sufficient amount of clock oil. Keep excess oil out of the rubber roll shaft bearings. By observing these two maintenance items, the machinist will secure maximum service from rubber rolls. Booth's rolls are made carefully from finest materials—they are concentric from end to end. $1.45 per pair; $7.75 per dozen.

Please place the A-10 Rating Under Preference Rating Order P-100 for Repair, Maintenance and Operating Supplies on your purchase order for our products.

THE E. A. BOOTH RUBBER COMPANY

364 ROCKEFELLER BUILDING • CLEVELAND, OHIO

What is printing's place in a world at war?

MIEHLE'S WARTIME PRINTING LIBRARY

shows both what has been done and what can be done

Twelve giant portfolios include hundreds of actual printed specimens tying in with government campaigns on

WAR PRODUCTION — CIVILIAN DEFENSE
CONSERVATION — WAR FINANCE
SALVAGE — NUTRITION
NATIONAL MORALE

☆ ☆ ☆

All portfolios include reference material — sources of information in Washington — sales and market analysis features for printers and lithographers.

THIS EFFORT IS IN SUPPORT OF THE PROGRAM OF THE GRAPHIC ARTS VICTORY COMMITTEE

MORE THAN 300 EXAMPLES OF WARTIME PRINTING, SUCH AS THOSE SHOWN BELOW, APPEAR IN THE PORTFOLIOS

OUT OF THE EARTH TO SERVE THE NATION
Help Make America STRONG
HOW TO IDENTIFY WARPLANES FRIEND OR ENEMY
KEEP YOUR PLEDGE!
Join the VICTORY CLUB
WAR SAVINGS BONDS

"For the duration there will be a diminution in product advertising, but this does not mean an end of advertising.

"There are many messages which should be given to the public through the use of advertising . . .

"If the members of your organization will . . . assist in the war program and continue the splendid spirit of cooperation which they have shown during the past year, advertising will have a worthwhile and patriotic place in the nation's total war effort."

PRESIDENT ROOSEVELT; to the Advertising Federation of America; June 17, 1942.

Miehle offers a Wartime Printing Library designed to give printers and lithographers data to assist them in fostering the use of essential printing — printing that will help the buyer and simultaneously get across a victory message.

Here is essential war work that the printer and lithographer can do — and *here* is a complete wartime printing market for the printer and lithographer, *as yet virtually untapped.*

There are *more than sixty* vital war campaigns sponsored by the government that have been launched to tell the civilian public how it can contribute to the war effort and adjust itself to war conditions. Each one of these campaigns must be brought home to millions of people.

In each program the government needs the cooperation of business in the distribution of information through the medium of printed matter.

And each one of these campaigns urgently needs a vast amount of printed display and follow-through printed advertising to make it effective.

WITH COMPLETE INFORMATION

Miehle's "Wartime Printing Library," at present consisting of 12 giant portfolios, covers many aspects of this new wartime advertising printing market. Each volume is a guide to:

- **a** The government's objectives.
- **b** The government organizations charged with establishing policies and promoting the campaigns.
- **c** How printing and lithography can be used in connection with the campaigns.
- **d** Information and material which can be used to implement the campaigns.
- **e** The type of material already being used by advertisers, in the form of samples.
- **f** How the printer and lithographer can go about developing business in the field of wartime printing.

FOR EVERY PRINTER AND LITHOGRAPHER

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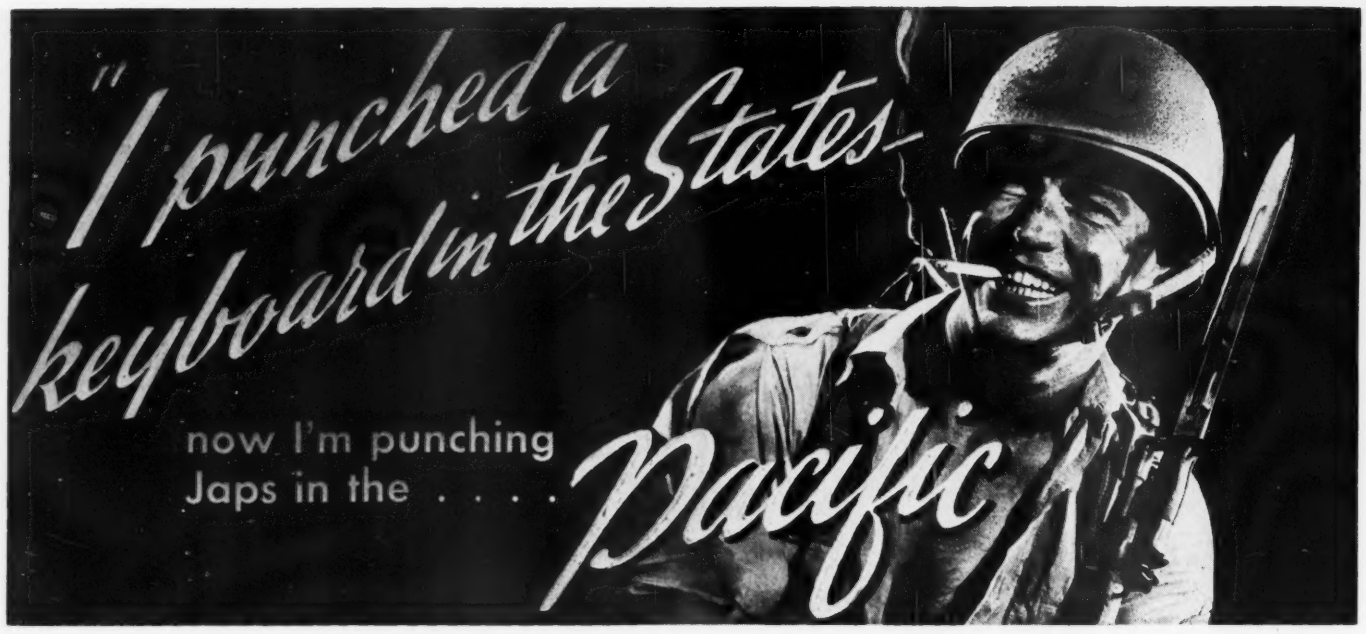

THE young, line casting machine operators of the nation are now in there punching for Uncle Sam. Figures recently released show that 21,000 men have left our newspapers and gone into the service . . . and the majority were from the mechanical departments. This means the burden of keeping up production falls on the shoulders of older men.

What to do about it? One easy, sure way to maintain your line casting machine production is by installing Black & White Matrix Contrast Service. Older eyes won't grow tired reading these processed reference marks. Tests made recently by Dr. Mathew Luckiesh show that processed matrices have a visibility approximately equivalent to 9½-point type, as compared with non-processed matrices which have a visibility equivalent to 3-point type. With an impending labor shortage and older men operating your machines, you cannot afford to overlook the savings in time and errors effected by Black & White Contrast Service.

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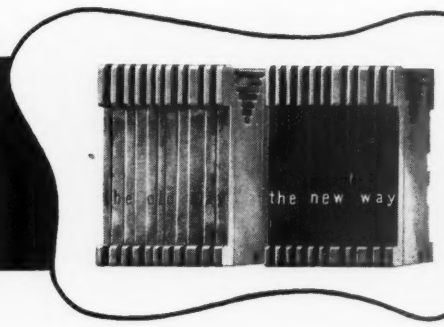


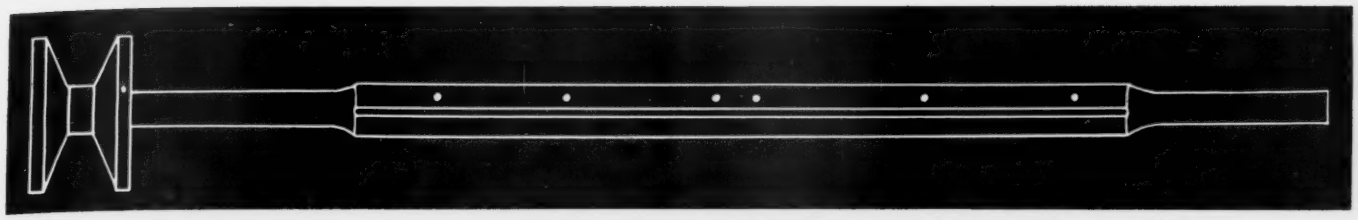


Fig. 1.—Diagram shows the rotary press square shaft used for supporting the paper roll on presses, where tension is applied to the shaft by the brake pulley. The holes indicated along one outer surface of the shaft determine the side lay of various width rolls.

Momentum exerted against coaster brake type of paper roll fastener is utilized as roll-braking power in pressroom of Calgary Herald

By FRANK MILNE*

*Mechanical Superintendent, Calgary (Alberta, Can.) *Herald.*

QUITE a number of newspaper and rotary publication pressmen have to use shafts and chucks to support the rolls of paper in running position on their presses. This article will be of interest to those pressmen who must use shafts where the tension is applied to the shaft by a brake pulley on the shaft and where there is difficulty with the rolls overrunning the chucks should there be a sudden stop at full speed, especially when the roll is almost full. Where the tension is applied to the outside of the roll by belts or other means, the trouble with chucks chewing the cores on quick stops, of course, is not encountered.

The paper roll fastening described in this article has the appearance of a free-wheeling Morrow coaster brake of the old bicycle days but its action is the very reverse of free-wheeling. Its holding power entitles it to be called a paper roll coaster brake in reverse. The momentum of the revolving roll on a sudden stop of the press increases the traction between the core and the shaft so there is no chance of the roll over-running the fastening and causing the core to be chewed up.

I don't know just how many plants are using them now, but pressmen are familiar with the old favorite core in which each end of the core is shod with an iron collar. A necessary part of this iron collar fitting is a notch which is damaged when there is a red-button stop of the press at full speed, especially if the brake or tension is applied to the shaft. The war has put this type of core practically out of existence owing to the lack of steel.

Some time ago, in casting about for some means of conceiving a design for a roll fastener which would not injure cores we gave the idea considerable thought.

Summarizing the various ideas into a comprehensive whole, we got the following features as absolute essentials to be utilized in a fastening for a paper roll and shaft:

1. It must be attachable to the roll and shaft without the use of tools of any kind except the hands.

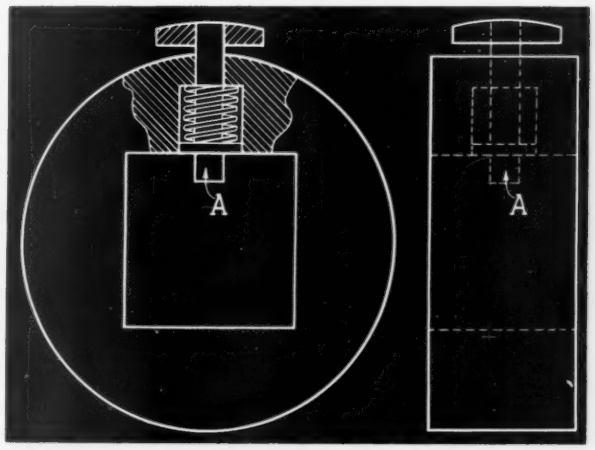


Fig. 2.—Partial cross-section and front view diagrams of collar used to keep paper roll in correct position on shaft shown in Fig. 1. The end of the spring-loaded catch pin is inserted in one of the holes drilled in the shaft to determine and hold the paper roll in proper position on the shaft.

2. It must be detachable with the hands only.
3. It must turn clockwise or counter-clockwise with equal facility and hold firmly whichever way it turns.
4. It must not distort the core from its circular formation.
5. It must not require the core to be iron-shod at the ends.
6. It must permit every roll to be attached to the shaft so that the side lay is exactly the same on every roll without the use of a gauge.
7. It must not chew up the core when the press is stopped on the red button at full speed when the roll is almost full size, especially if the brake or tension is applied to the brake pulley on the shaft.

That seemed to be a tall order, but the following description and the accompanying drawings give the details of a fixing for rolls that is not a chuck, yet fulfills all the details enumerated above. It has been in use on the Calgary *Herald* for the last eight or nine years. Habitually, we operate our press runs between 32,000 and 35,000 p.p.h., although at times we have run up to 41,000 p.p.h. in an emergency. During that time nothing has been renewed, no roll core has ever slipped on the shaft and no core has been burst, misshapen, chewed up or damaged by sudden stops at full speed. The pressmen can shaft up a roll under half a minute and the side lay is exactly right, using no tools or gauges whatever except the hands. The empty core can be taken off the shaft in less time.

The paper core in use is made by the Powell River Paper Co., B. C. Its inside diam. is 3 in. with an average weight of 6.2 lb. for a 68 in. core and is not fitted with iron collars at the ends.

To make a roll shaft procure a length of steel 2¼ in. *square* and of the correct length for the press. This shaft is more than 3 in. across the corners so these must be turned off until the two opposite corners measure 2⅛ in. apart as shown in Fig. 4. This allows the shaft to enter freely into the opening in the end of a 3 in. core. The shaft is then turned down at the ends to fit the roll bracket bearings, after which the brake pulley is fitted into place as in Fig. 1.

Make two collars 5½ in. diam. and 2 in. wide. These collars are intended to keep the roll in position sidewise only. There is no strain on these collars what-

Fig. 3.—Side and end view diagrams showing construction of the eight loose braking elements which are inserted between the shaft and the inside wall of the paper roll core.

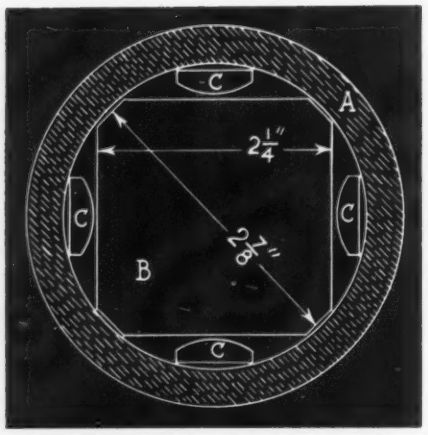


Fig. 4.—Cross-section assembly of the Milne paper roll coaster brake. *A* is the roll core, *B* is the 2¼ in. square shaft, and at *C* are indicated the braking elements. When the press is to be stopped, the paper roll impinges the braking elements against the flat surface of the shaft and the interior wall of the hollow core.

ever. They must be provided with a square hole to permit moving freely over the square shaft. To keep the collars in the correct position on the shaft, there is a spring-loaded catch which can be raised by hand to release it from the shaft, as in Fig. 2. This spring must be strong enough so that the catch will not fly out when the shaft is running fast when the roll is expiring. After the shaft and collars are finished, the shaft with the collars should be statically balanced and lettered or marked so that the same collars will always be placed on the same shaft.

Get a length of quarter-round iron 5/16 in. thick and about 1¼ in. wide; cut eight pieces 6 in. long for each shaft or roll. These eight gibs or keys are the real fasteners for the roll and they are to be inserted into the core on the flats of the square shaft, four at each end of the roll *with the round side of the pieces or braking elements next to the square shaft*. The quarter-round iron is a little too wide to go into position, so the two edges must be cut off at right angles to the base, leaving a width of approximately ¾ in. as in Fig. 3. A general assembly of the core parts is shown in Fig. 4.

The last thing to do is to determine the correct position of the collars on the shaft for the various widths of rolls. Insert the shaft into the core of a 68 in. roll and after gauging the correct distance the edge of the paper must be positioned away from the brake pulley, bring the collar up to the edge of the roll and while pressing it tightly against the paper, mark the position of the spring catch pin on the shaft. Then bore a hole in the shaft to allow the spring catch to enter the hole. Do the same at the other end of the roll and the shaft is finished. The position for the 51 in. and 34 in. rolls can be found after the full roll is correctly marked. When the shaft is complete there will be six holes in the shaft, this will take care of three widths of paper. These holes must be located exactly alike on all shafts if the side lay is to be correct for all rolls.

When the roll is to be made ready for the press all that needs to be done is to insert the shaft into the core; then put in the four gibs at each end of the roll as mentioned above and push the collars up against the roll until the catch is in position. When this is done, the roll is ready for the press. It will hold firmly and will run either clockwise or counter-clockwise as desired.

After the roll is run off, the core and shaft can be taken apart with ease. The braking pieces never lock—they simply fall out of the core as soon as it is pulled off the shaft.

War needs may prevent anyone from getting square steel for shafts in quantity but squares about a foot long can be electric welded on to the present round shafts where they are required to fasten the various widths of rolls and will be quite efficient.

If any pressman is doubtful about the above fixing, he can make a test by taking a piece of hard wood 2¼ in. square and about 2 ft. long, plane off the corners and while holding it in a vise put a core over the squared length of wood, insert the four braking pieces of quarter-round iron, then have two men try to turn the core.

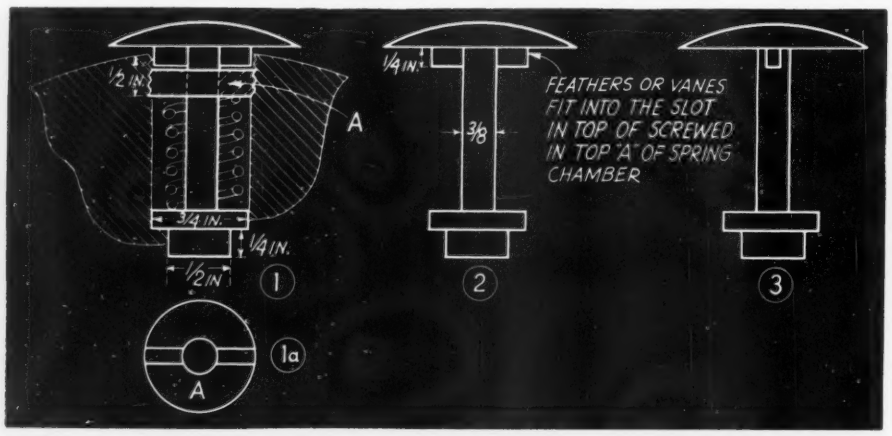


Fig. 5.—Several diagrams show construction of spring-loaded catch pin or detent which is used for maintaining position of the roll endwise on the roll shaft. At *4* is shown top view of the screwed-in top *A* in Diagram No. 1 of this Fig. 5. The screwed-in top is fitted with a slot to accommodate the feather or vane under the head of the detent pin. When the detent is lifted and is turned halfway around, the pin is held out of the hole in the roll shaft. The hole in the roll shaft is ½ in. deep by ½ in. diam. The tip of the pin, however, as shown in diagram No. 1 only extends ¼ in. into the hole in the shaft.

Typographic Shadow Boxes Help Conserve Vital Zinc

By STAFF WRITER

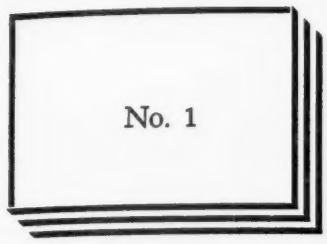
ACCOMPANYING this article are several specimens of boxes fashioned from machine-cast material. To be sure, there isn't anything new about the use of boxes in typographic composition, but in the present emergency the revival of boxes in modernized form for display composition would seem to be a powerful and desirable substitute for many of the arty borders photo-engraved on zinc. The necessity for zinc conservation has become apparent to all printing plant executives since the Amended Obsolete Plate Order M-99 was issued by WPB.

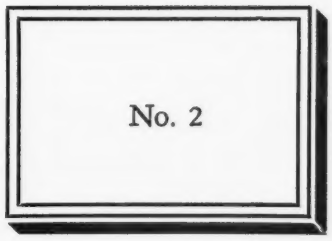
The Washington (D.C.) Ad Club recently formulated 12 suggestions for conserving photo-engraving zinc. Among the suggestions is one recommending the use of machine-cast borders and rule for decorative purposes in place of the much-used photo-engraved zinc decorative borders. Undoubtedly, these zinc conservation suggestions will be adopted by publications throughout the country because all of them are practical.

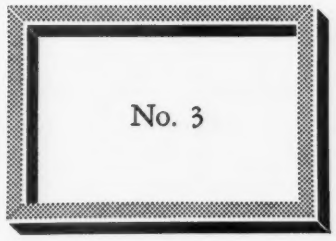
It isn't necessary, of course, to explain how the accompanying box specimens have been made. Suffice to say that they are no problem to construct if the composing room is equipped with a saw-trimmer and/or a miterer or other tool with which to cut the rule and the angled ends. Innumerable combinations of border-and-rule boxes may be prepared from a limited variety of machine-cast material.

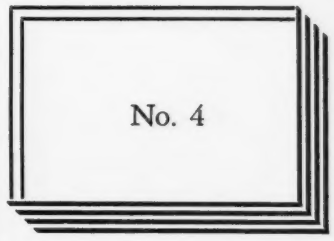
As a further aid in enabling company representatives to explain the use of these boxes in display composition, a predetermined number of boxes could be made up and a separace number given to each box, starting with No. 1. The boxes, with explanatory notes set into type, are then made up into a form and printed for distribution as specimen sheets by the advertising department. If a department store wishes to use one or more patterns of boxes in its advertising, the copy writer can designate on the copy by number the box or box styles to be used. The advertising men, or others who usually make contacts, can readily secure customer cooperation, especially if the zinc restrictions and the necessity for its conservation are explained.

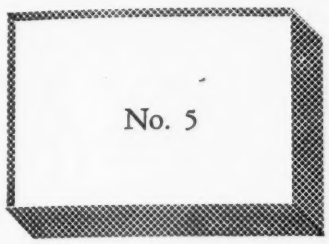
Pressroom Superintendent Dave Lambert who was connected with the Detroit *News* for some time, passed away on Monday, January 4. He was buried at Spring Lake, N. J., on Thursday, January 7. Mr. Lambert was well and favorably known throughout the United States.

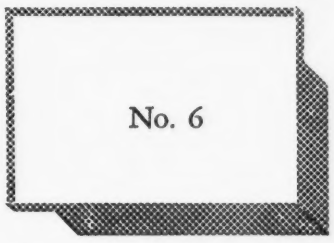


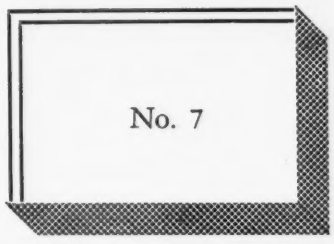


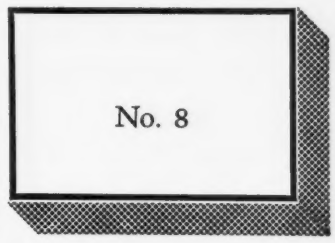












NUMBER 9—RIGHT

When no special instructions are given, RIGHT shadow boxes only will be furnished.

SHADOW BOXES

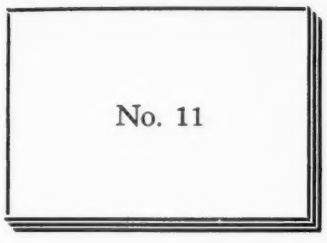
By David Reisz, Typographer

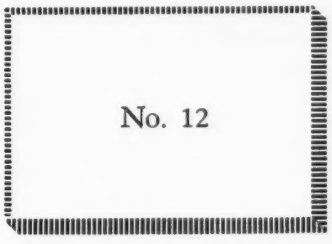
Designed to conserve zinc, now vitally essential for the war effort. Made with regular rules and borders.

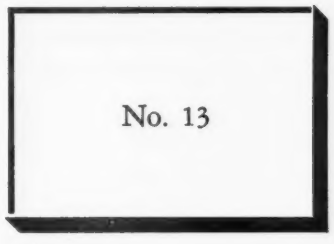
Specimens furnished by courtesy of The Cleveland Shopping News

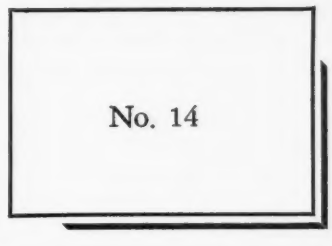
← LEFT—NUMBER 10

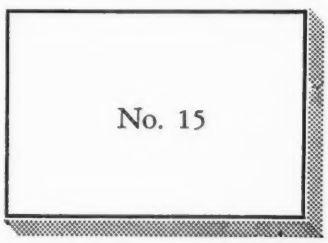
These shadow boxes can be made any size desired. Other combinations are also possible.

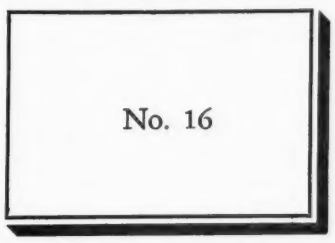


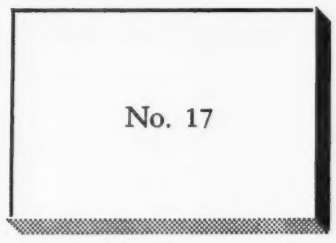


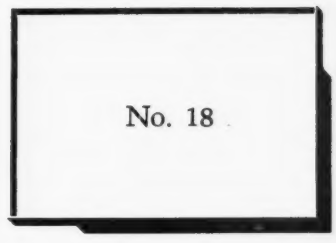


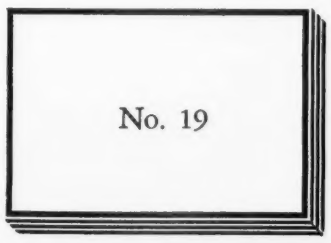


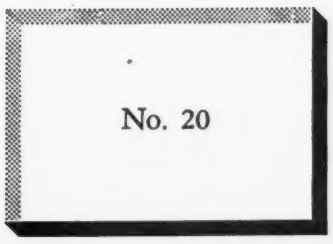


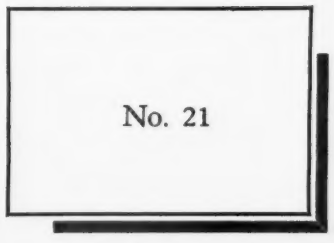


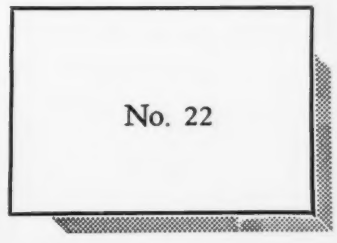






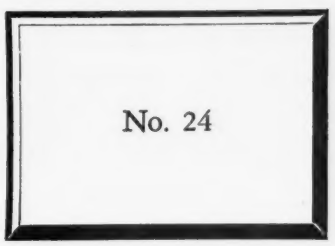


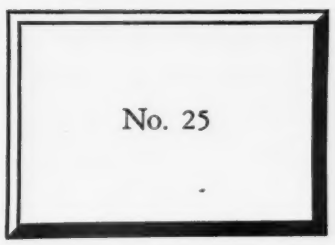




NUMBER 23—RIGHT→

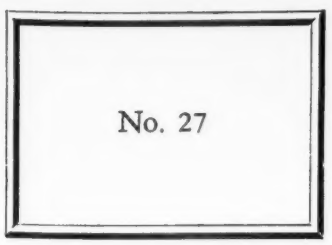
When no special instructions are given, RIGHT shadow boxes are furnished. Other combinations are also possible.

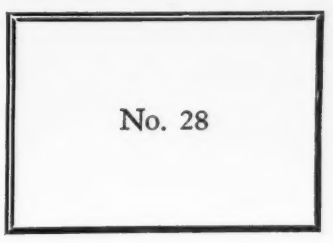


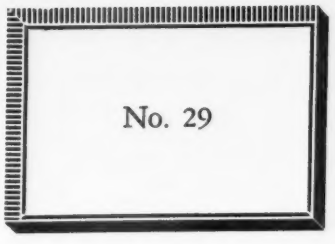


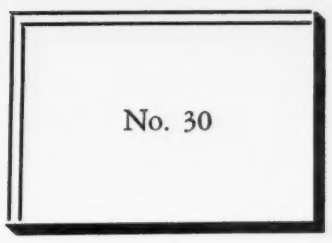
NUMBER 26—RIGHT→

To make it easy for customers to order, printers may renumber and publish only those specimens preferred.

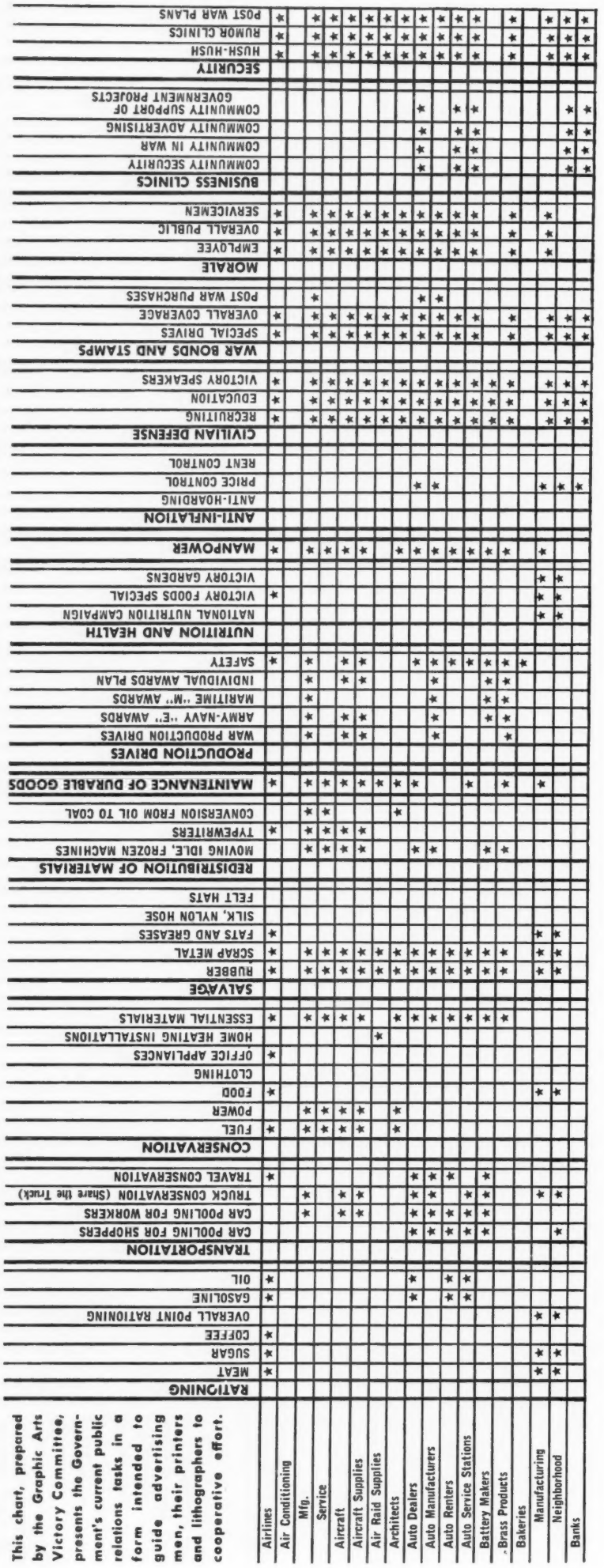








HOW TO ESSENTIAL-IZE YOUR PRINTING AND LITHOGRAPHY



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Point Rationing

Office of Price Administration

Growers, canners, wholesalers, dealers, trade groups of consumer goods affected by new OPA ruling can devote much of their printed advertising to educating public in intelligent buying via point-coupons. Write Barton Cummings, Office of Price Administration, Washington, D. C.

"Share the Truck" (Truck Conservation

Office of Defense Transportation

ODT is seeking the support of truck manufacturers, truck service and repair depots, dealers, oil companies, trade groups in urging cooperative use of intra-trade delivery facilities. Write Paul Bolton, Office of Defense Transportation, Washington, D. C.

Rent Control (Anti-inflation)

Office of Price Administration

OPA is looking to banks, building and loan associations, mortgage and loan companies, trust companies and real estate management organizations for assistance in stressing the urgency of rent ceilings to stem inflation. Write Barton Cummings, Office of Price Administration, Washington, D. C.

Conventions By Mail

Office of Defense Transportation

Sales organizations, trade associations, civic and fraternal groups will soon be asked to consider conclaving via the mails to conserve transportation facilities for more urgent needs. ODT has been advised that mail conventions may be directed until Victory. Write Graphic Arts Victory Committee, 17 East 42nd Street, New York, for new brochure titled, *How to Conduct Your Convention by Mail.*

Harry Hale, who has been head of the engraving department since August August 1936, is now production manager of the Portland (Ore.) *Oregonian*. In the newly created position, Mr. Hale will serve as assistant to Business Manager M. J. Frey. Before joining the *Oregonian*, Mr. Hale was president of the West Coast Engraving Company.

Mechanical and Production Executives:

Essentialize Your Printing

Learn how your *sales force can put* your *presses to work turning out vital war information*

YOUR Uncle Samuel and mine—through his oh-so-many cap letter departments OWI, OPA, WPB, ODT, OCD, *et al*—has more public relations tasks than Boston has beans. Result—*complete* coverage on any one project is never forthcoming. Right now your Uncle Samuel and mine sees in the direct mail users of America, their printers and lithographers, a great and effective army of informants channeling their publicity and advertising efforts toward a single objective—that of winning the war.

Specifically and compositely—according to your fellow countrymen Ken R. Dyke, Chief, Bureau of Advertising at OWI; Paul Bolton, first aide de camp to Director Joseph Eastman at ODT; Barton Cummings, information chief at OPA and their host of compatriots at the other government agencies—here's how:

There isn't any one piece of direct mail produced today, any individual promotion plan or merchandising program that can't tie itself to one of the many important Government Victory projects contributing so vitally to winning the war.

No matter how you look at that appeal it presents ad men, printers and lithographers with thousands of opportunities to hop aboard the "essential" bandwagon. Pronto! if printing presses are going to grind out ammunition worthy of active participation toward Victory.

This much is certain. Your salesmen don't have to be guided in the development and creation of good promotion ideas. That's their business. They instinctively plan with sales results in mind. Their experience dictates that approach. To enlist their talents, Mr. Superintendant—and your equipment—your salesmen have only to be shown where their help is needed.

That's our job (your reporter is speaking now for the Graphic Arts Victory Committee) to show your salesmen what Government public relations jobs will benefit by their assistance and how, possibly, their regular customers can be sold on budgeting their publicity allowances for the "essential" work at hand.

Look over there on the opposite page at the partial reproduction of a chart. That chart, *How to Essential-ize Your Printing and Lithography*, lists more than 60 vital Government public relations projects, every one of which offers printers and lithographers a chance to put their talents to the winning wheel. The chart, in its complete form, lists more than 200 businesses and service organizations and recommends the projects that conceivably, and best, fit into the individual merchandising and promotion plans.

Admittedly, the indication of the chart on the opposite page is only a "come on". But actual copies of the approved guide, full and complete, are available for the asking. Your salesmen's asking, Mr. Superintendent, if you'll have them write the Graphic Arts Victory Committee at 17 East 42nd Street, New York.

There's considerable reference, sales-wise, to the Victory projects in the trade papers in which the selling folks are most interested, but when you, Mr. Superintendent, present the story from your favorite publication, your reporter believes sincerely that aforementioned salesmen are going to sit up and take notice. After all, you do want your presses to go to war a-winning, and your salesmen are the boys to lead the way.

Rationing Program Needs Constant Aid

For instance, there's the job at hand of educating the consuming public to accept rationing as the only answer to enough for all in a wartime emergency. Sellers of affected products and merchandise can accomplish wonders with advertising which is keenly informative. The bakers of Bond Bread weren't long in tagging their advertising program to the job of selling, of all things, meat rationing to the public. They did a worth while job because, by helping the consumer-housewife understand the reason for rationing meat and showing how, with bread, meat rations could be "stretched", they also took the long range view, anticipating the day when bread will be among the rationed commodities. Bond Bread said just that.

Right now, the major public relations problem of the Office of Price Administration concerns point rationing. OPA is shouldered with the task of teaching 130 million Americans how to make their purchases of canned, dried and frozen foods via point coupons. It's new currency, foreign to all. OPA is hopeful that canners, growers, packers, wholesalers and trade associations marketing, or those concerned with the marketing of affected products, will direct their advertising efforts to teaching intelligent and patriotic spending of the point coupons.

ODT Faces Three New Problems

Take a hop, skip and jump over to the Office of Defense Transportation and you find that important organization saddled with the job of conserving travel and selling the share-the-truck idea to whole industry groups and trade associations. They've even taken over the assignment

Availability of Color

A STATEMENT has been issued by Secretary David H. Sloane of the National Association of Printing Ink Makers respecting the availability of color printing inks. While all mechanical executives are aware that limitation of equipment and supplies is the order of the day, yet many of them hear unfounded rumors about the availability of this or that supply item from time to time. It is for this reason that *Printing Equipment Engineer* is printing the statement issued by the National Association of Printing Ink Makers.

Particularly, executives should keep in touch with representatives of ink manufacturers so that they, in turn, will be in a position to advise their firm's customers. The statement is as follows:

"Amended Conservation Order M-103, issued by WPB January 21, 1943, places *no* restriction on the *use* of color in advertising, publishing or printing. It limits *purchases* by inkmakers of one class of color pigments. It does not, however, limit the use, even to the inkmaker, of those pigments, in excess of such purchases, if he has the extra material on hand. Nor does it affect the other classes of pigments used, which make up by far, the greater sources of the colors for our industry purposes.

"Due to the decline in consumption of color used in many fields which have been curtailed since the start of the War and further due to modern research which anticipated many of the problems presented, there will be an ample supply of color inks for permissible uses.

"During the year 1942 there have been restrictive orders affecting the Printing Ink Industry and yet the Industry served its customers satisfactorily. At no time was anybody deprived of color inks. In so far as availability of color inks is concerned, *that situation will continue.*

"If you contemplate a color job, don't let some unfounded rumor or irresponsible gossip about color scarcity, determine your course. Consult your printer or lithographer. He is in constant touch with his inkmaker who will acquaint him with the facts."

of selling sales organizations, civic and fraternal societies, any and all associations holding conventions, on the idea of conducting their conclaves through the mail.

You see, Mr. Superintendent, along every step of the way toward Victory there's a place for your salesmen—natural places, tailor-made places. What they do best is needed—such as creating sound, merchandising plans that further the total war effort.

The Conservation and Salvage programs have been helped most of all by the genius of ad men, printers and lithographers. Long before there was any sign of fuel oil shortages General Electric Company issued its now well known manual for the operator of home oil burners. *Tips*, it is titled, and it called the turn on the oil shortage that has the East three feet deep in wool blankets.

Everyone knows how the rubber companies took to the conservation program set up by WPB. The importance of the need for conserving every item of durable nature is still good advertising. Bendix Home Appliances's conservation program helps the nation-wide dealer organization do a better job and looks far forward to post war plans.

With food supplies shrinking to a new low (for Americans) the big job of the moment is selling the public on healthful eating habits. When milady goes to market henceforth she'll go buying vitamins. That's certain, now. No one realizes this necessity more than the Office of Defense Health and Welfare and the Office of War Information who are collaborating on an educational program surpassing any public effort ever made. Won't the smart food processor, canner, grower, etc., be an important link in the health chain? Just bet he will. He'll be selling vitamins just as proficiently as will the health agencies. He'll need the help of fellows like your salesmen, Mr. Superintendent.

Manpower's coming in for a major share of publicity. Not so much concerned with enlisting more help for war industries, as with educating the present help for more responsible positions.

There's OPA's job of combatting inflation—rent control, hoarding, price ceilings.

There's the Treasury Department's constant need for Bond drives and special promotions.

But your reporter isn't going to describe at length all the current Government needs. Your salesmen, Mr. Superintendent, will catch on quickly enough once he is armed with the How to Essential-ize Your Printing and Lithography chart. This comprehensive study of Uncle Sam's public relations requirements guides the way to a better interpretation of those necessary publicity programs. So suppose you stir your salesmen friends to writing for the chart. The address remember, is Graphic Arts Victory Committee, 17 East 42nd Street, New York, N. Y. Your salesmen's requests amount to as much as enlisting in the great American army of informants. What's more, they'll furnish themselves with enough incentives to keep their creative departments working overtime —until Victory.

That's an important wartime role, today, Mr. Superintendent—and you're doing more than your part by stirring up the interest.

Mechanical Executives — Take the Initiative

IN the January issue of *Printing Equipment Engineer*, the attention of mechanical executives was called to the provisions of Machinery Order L-226, in which it is stipulated that when new operating supplies or replacement parts are purchased from a manufacturer or distributor, similar displaced parts in size and kind must either be sent to the firm from which your company purchased the parts within 30 days, or your company must certify to the manufacturer or distributor concurrently with purchase order that the displaced parts will be disposed of through scrap channels within 30 days of the time the new parts will have been received.

The intent of the order seems to place responsibility for the return of discarded machine parts upon the manufacturer and the distributor. It would appear that responsibility for the return or disposal of discarded parts should be a responsibility of the printing plant making the purchases, particularly the mechanical executive, because it is in his department that replacement parts orders are originated and from which the discarded parts must be secured for shipment or disposal. The manufacturer will appreciate your cooperation highly. Machinery Order L-226 is now a law—don't be a lawbreaker. By voluntarily complying with the Order's provisions for the return or disposal of replaced machine parts, you will be assured of getting future parts promptly.

In a release issued January 7, WPB clarified a number of transactions affected by Machinery Order L-226. In answer to a question as to when a part should be returned to the manufacturer instead of being scrapped, it is stated that when the part is relatively small and light or when made of alloy steels or other materials more valuable than scrap iron, it should be returned to the manufacturer.

When the part is unusually bulky or heavy and would result in a high shipping cost if returned to the manufacturer, it may be scrapped by your company. In this instance, your company must certify to the manufacturer that you have disposed of the part through scrap channels.

Another provision for disposal of a part should not be overlooked. When your company engages the manufacturer's erector to install a new part in a machine, you must give the old part to the erector who may either scrap it locally or return it to the factory.

Schedule B, in which are designated a number of "operating supplies" as coming within the meaning of Machinery Order L-226, contains the names of supplies and parts which have considerable mortality in the printing plant and must be replaced at intervals. We understand on good authority that this list will be revised at an early date. Pending the revision, however, it should not be difficult for plant executives to determine the "operating supplies" and/or "parts" included in the meaning of the order.

If you have not already started to do so, commence now to gather together all those many supplies and parts which have become worn out and are no longer serviceable—those parts which customarily are ordered in quantities, such as matrices, spacebands, routing bits, gauge pins and the various kinds of knives replaced from time to time. Then when you order 20 of this, or 3 of that, you will be in a position to return the old parts of similar kind and size within 30 days after receiving the new supplies or parts.

Focuses Attention on Essential Printing

THE new experimental advertising effort of General Printing Ink Corporation seems to tie in directly with the aims and objects of the Graphic Arts Victory Committee, whose theme is "Essentialize Your Printing." In an effort to focus attention upon the importance and essentiality of printing reproduction in a war economy, General Printing Ink is experimenting with a campaign in advertising publications, business magazines and the advertising news section of newspapers.

The several divisions of General Printing Ink will maintain their own advertising budgets, but the new campaign will be signed by the corporation with all of its divisions listed.

Executives of national advertisers and advertising agencies will be exhorted to consult their printers, lithographers and other reproducers of graphic arts material to obtain the answers to the problems caused by reduced sales staffs, restrictions on travel and other curbs.

A phase of the campaign will be teaser advertisements (one reproduced here) which ask questions like "Have you seen your printer today?" and "Are you printing for Uncle Sam?" In presenting these teaser advertisements, it is the belief of General Printing Ink Corporation that alert printers are ready to answer such inquiries with constructive suggestions and creative ideas for printing essential literature.

Crystallization of printing inks

when color jobs are run on single and two-color presses—

Causes of crystallization explained and remedies suggested

By RONALD J. McEACHEN*

*Superintendent, E. J. Kelly Co., Kalamazoo, Mich.

CRYSTALLIZATION as understood by the Graphic Arts Industry is the term applied to a dry printed film when for any reason this film cannot be over-printed with another ink. In this day of high-speed printing on two, three and four-color presses, crystallization of ink films would seem to be relatively unimportant. However, there are any number of two, three and 4-color jobs being run on single and two-color presses at the present time. Whenever one color is printed and allowed to dry before the next colors are printed, the problem of crystallization is liable to appear. If the inks to be printed on this type of job are not handled correctly, many problems will be presented both to the pressroom and to the ink maker.

It is the purpose of this article to enumerate the reasons for crystallization of ink films, and also to pass along some hints as to possible methods of correcting this type of trouble in the pressroom. Since crystallization is principally a factor of the dried ink film, it might be well to give a brief resume of the theory of drying and film formation of printing inks.

Fundamentally, printing inks are made up of two components—pigment and vehicle. Pigments are used to lend color to the printed film and may be considered the basic ingredient in the ink, for without them there would be no reason for the other component. The vehicle is used primarily to bind the pigment to the printed surface, to carry and distribute the pigment on the printing press, and allow it to be transferred adequately from the printing media to the surface of the material being printed.

Drying Property of Linseed Oil

The vehicle of most printing inks in which crystallization is a factor consists usually of some type of film forming oil. Many types of drying oils are used by the printing ink maker. However, they all have the property of forming a hard dry film after being printed. Because of its relative availability and price, the most common one in use today is linseed oil.

A *thin* film of linseed oil will harden gradually and become solid after a period extending from 4 to 5 weeks. The reason for this is that the linseed oil gradually absorbs oxygen from the air. As the oxygen is absorbed, a chemical change in the oil takes place, and the linseed film loses its fluidity, becoming a semi-solid jel. As the changes continue and more oxygen is absorbed, the film passes from the jel stages to a continuous and hard, flexible film. It is at this point that an ink maker or pressman would say that the film has dried.

Oxidation-Polymerization

This absorption of oxygen and forming of a film is generally called oxidation of the linseed oil. Some drying oils will exhibit the change from fluid oil to a hard film without absorbing oxygen, the change being due to chemical rearrangement of the internal or molecular structure of the oil. When this occurs, it is termed polymerization. The effect of oxidation or polymerization in an oil eventually leads to the same thing—a solid film formed over any surface coated by the oil.

Acceleration of Drying

It would be impractical to print a film of linseed oil and then wait 4 to 5 weeks for the material to form a hard dry film. To accelerate this film formation, driers are added to increase the speed of drying. Since driers will play a prominent part in crystallization it may be well to mention the drying metals and some of their properties.

RONALD J. McEACHEN

is superintendent of the E. J. Kelly Company. During vacations, while attending the University of Notre Dame, he worked at various jobs in a paperboard mill. Upon graduating from Notre Dame in 1931 with a B. S. in Chemical Engineering, he went to work in the printing department of a carton plant, including experience as a pressman. His initial experience with ink making came in the private ink plant of a large paper box manufacturer. McEachen joined the E. J. Kelly Company in 1935 as chemist and in 1937 was made plant superintendent which is his position at present.

The three metals generally found best for accelerating drying are cobalt, lead, and manganese. All printing ink contains some combination of these three driers to hasten film formation. Cobalt compounds are the fastest accelerators for drying, but they have a tendency to cause oils to absorb oxygen so fast that the film dries to a hard top while the bottom of the film is still soft. Lead and manganese compounds are slower than cobalts and the absorption of oxygen is more uniform throughout the film. Most past driers are combinations of lead and manganese compounds.

Crystallization

We can now take the simplest case in which crystallization can occur and see what film formation will have to do with it. We can start with a two-color job printed on two single-color presses. Say, for instance, yellow first down, black second down, and assume that the stock being printed has some absorbency. The yellow is made from linseed oil as the vehicle, and cobalt drier used to speed the drying As the ink dries, the film

(*Continued on Page 24*)

Start "Saving" Them NOW

ACCORDING to Machinery Order L-226, you must return worn-out or discarded operating supplies and machine parts to the manufacturer within 30 days in exchange for the new parts which you have purchased. Many operating supplies and replacement parts, of course, are ordered in lots of from two pieces to a dozen pieces (in some instances, gross lots). Gather up all of the old parts lying around your department, sort them, and have them ready—either to return to the manufacturer from whom you will have received the new supplies or parts, or to dispose of them through scrap channels. In the latter case, it will be necessary for you to certify to the manufacturer concurrently with the purchase order for new parts that your company will dispose of the old parts within 30 days.

With ever-present cigar (well chewed) Charles Furth was always eager to see first results from the gravure press. "Impatient with impatience", one of his traits was to discard a press plate which didn't measure up to his standard.

Tribute To Charles Furth

MANY production and mechanical executives throughout the country, especially those associated with gravure production, will regret to know about the passing of Charles Furth, President of the Photogravure & Color Company, Inc., 207 West 25th St., New York, New York. Mr. Furth functioned actively in the development of gravure. However, his activity consisted mostly of the fine craftsmanship which helped gravure attain its present place in the printing sun. He bridged successfully the transition of gravure from the hand process to mechanization which occurred in the early 30s. The following brief tribute was written by one of Mr. Furth's many admirers:

"The Old Gentleman" died Friday afternoon, November 20, 1942, after a brief illness. He was not known to as wide a circle of pioneers like Senefelder, Horgan or Mergenthaler, and others to whom we owe the great inventions of the Graphic Arts. He was not known, as have been our great typographers—men like Rogers, Updike or Goudy. Yet, without the tireless craftsmen, (and Mr. Furth ranked among their very best) neither the work of the great inventor would achieve its fullest potential, or would the implication of the fine design by the great typographer be realized.

There was apparently little of the dramatic in Mr. Furth, heavy shouldered and stooped, in his shirt sleeves, the ever-present cigar well chewed—pouring etching acid over copper gravure plates, or working over a plate under a glass, or examining a print. Yet those of his customers who on occasion watched him probably saw more than the racks, the enamel pitchers, and the running water. They knew from experience the depth of tonal value and the detail which he would achieve. They knew Mr. Furth's impatience with impatience and his trait of discarding the plate that did not measure up to his standard.

His associates, many of years' standing, might have seen still another picture. The aptitude for every step of the gravure process, at times seeming to be a sixth sense, had a history in long years of work and patient experimentation.

Born in Austria, on July 30, 1872, he came to this country in 1890 and began his life work here as a boy of 18. His first apprenticeship was with Jellnik a photogravure plate maker. Then followed training, undoubtedly of great importance throughout his life, with G.W.H. Ritchie, son of the great engraver A. H. Ritchie.

Fred Bittner, who now runs the Company, can take you back to 1903, when he worked with the boss at the F. A. Ringler Company. He can tell you about the establishment of Mr. Furth's own business in West Hoboken (now Union City), in 1915, the move to West New York in 1917, and the acquisition of the Photogravure and Color Company in 1920, from its owner, an older man who looked for and found a person of ability to take over his interests. It was in those days of grained photogravure, plates inked and printed by hand, Fred Bittner will tell you, that the monumental records of libraries and art collections were done for Clarence Mackey, for Schiff, for Huntington, and many others.

Then in the early thirties came mechanization. First, there were Waite and Carver power presses, hand-fed but far faster than the earlier method. In 1933, a German press was purchased, then machines of the Harris-Seybold-Potter and the Miehle companies as they were developed.

Today, the "new equipment faces" to be seen at the Photogravure & Color Company are the modern presses yet, the hand presses are still there for the fine work. The men look and talk "old school" as well they might after Mr. Furth's long training in the way he thought things should be done. He passed on his heritage to them and in a sense to all of us in the Graphic Arts who believe in the better way of doing things.

gradually passes through a jel stage to a dry film which gradually becomes extremely hard. The cobalt drier will accentuate this condition because of the top drying. When the next color is printed over the yellow, the film is so smooth and hard that the second color cannot penetrate the film and adhere to it. Consequently, when the black dries, it has no adhesion and powders off. The film of yellow may even be so hard that the black cannot wet the yellow film and a condition commonly known as crawling results. The black will pull up into small droplets over the yellow film and appear as if it is not printing.

Correcting Crystallization

Now, if the cobalt drier in the ink is replaced with a combination of lead and manganese drier, we are taking our first step to correct crystallization. These two driers will give a slower, more uniform drying action and the film will not reach the hard continuous stage as quickly as the yellow containing cobalt. This being the case, the yellow can be checked and for a definite time after it is apparently dry it can be overprinted successfully with the black which will adhere very well. Eventually, however, the film will harden to the extent that it will be as hard to overprint as the one containing cobalt. There is one drawback to using this type of formula. If the printing is on an absorbent stock, the slowness of drying may allow the vehicle to be partially drained off from the pigment. This will leave the pigment insecurely bound to the paper and will result in chalking.

Since the hard glossy film is one of the reasons for crystallization, it becomes apparent that anything introduced into the ink to break up the continuity of this film will be a step forward in preventing crystallization. The addition of a non-drying product such as wool grease will do this. This wool grease acts as an adulterant, and as the film forms, the grease will have a tendency to retard the formation of hard continuous film and leave it more receptive to overprinting. The judicious use of both cobalt and lead manganese drier will give a film that can be overprinted and still will not chalk off.

Excessive quantities of this type of compound will, of course, retard the drying considerably, yet not enough will allow the formation of the hard film and lead to crystallization. This type of ink, while considerably better than the previous samples, still requires a great deal of experience and technique with regard to pigments and driers to give successful results.

Most Widely Used Method for Crystallization Control

The last and probably most widely used method for controlling crystallization is by use of a vehicle composed of a non-drying oil and resin used in conjunction with the drying oils. The non-drying oil is usually of the petroleum type and the resin is usually a derivative of wood rosin that has been chemically

WATCH THAT LEAD!

That little hunk of lead on the side of the matrix can cause as much damage to your Linotype as a sledge hammer! It looks insignificant but much faulty machine product can be laid to leaded matrices.

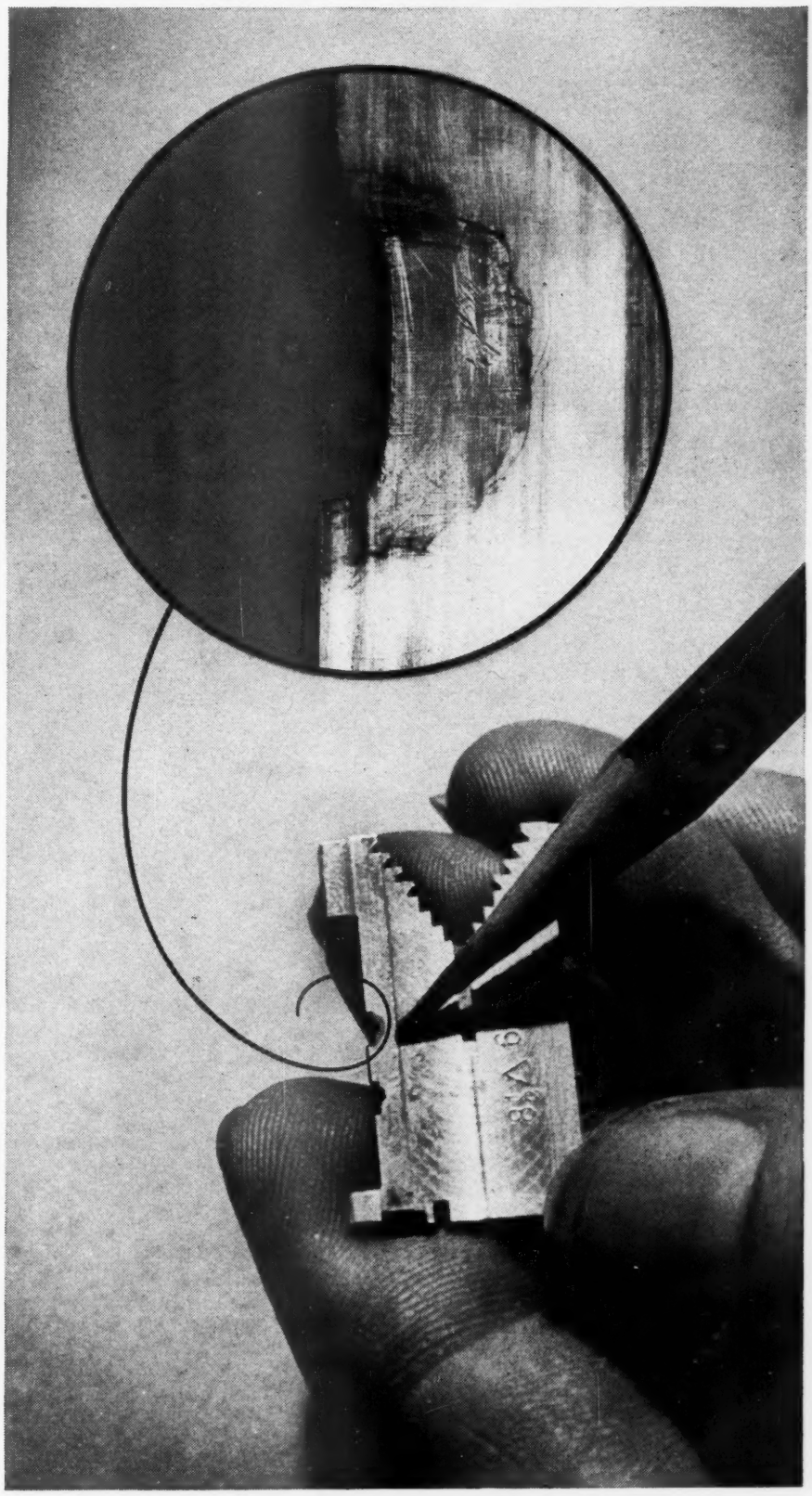
Where does it come from? The answer is dirty spacebands, oily matrices, improper machine adjustments. And leaded matrices invariably mean defective print.

Keep those matrices and spacebands clean to assure longer life of your equipment. Consult your Linotype Life Extension* series for maintenance tips and routines.

Five free booklets: The Care and Maintenance of Matrices; Routine Checkups, Cleanliness and Lubrication; Assembling; Casting; Distribution and Driving. Send for them.

LINOTYPE

FOR VICTORY—
★ BUY U. S. WAR BONDS AND STAMPS



Linotype Metromedium No. 2 and Spartan Heavy

treated. The non-drying oil resin vehicle breaks up the continuity of the drying oil film, but still has enough binding power so that it will not partially drain off from the pigment and cause chalking. Fairly large amounts of cobalt and paste driers can be added and still have a mellow film for overprinting. This type of formula when used on stocks that are somewhat absorbent allows the ink maker to add varnishes, waxes, and compounds usually used in printing inks to improve working properties and prevent mottling and offset. This is probably due to the fact that the percentage of non-crystallizing varnish is high enough to prevent a continuous film being formed and the partial penetration into the sheet gives sufficient adhesion for all practical purposes.

If a non-absorbent stock is used such as metallic stocks, the adhesion of the foregoing formulation will not be sufficient to bind securely on the stock. For this reason, it will be necessary to go to a harder film forming material and regulate the drying so as to overprint the material before an extremely hard film is formed. Of course, in this type of printing, chalking will not occur due to the non-absorbent nature of the stock. This non-absorbency may cause other difficulties, however. If greases or waxes are added to the ink, during the formation of the film small amounts may be forced through the film and lay on top of the dried ink in a very minute film.

When the succeeding color is printed, this minute film of grease and wax will prevent adequate adhesion of the top film to the first down color. After drying, the color is easily rubbed off. In extreme cases, it may even be impossible to obtain a smooth print due to the inability of the second film to wet the surface of the first film, causing the ink to pull up in small drops on the print. This phenomenon is often times noticed when trying to overprint a gloss color after it has dried.

Formulation of Non-Crystallizing Inks

The formulation of non-crystallizing inks probably reaches its peak in the running of four-color process work on single-color presses. Assuming that the job will run on the usual run of semi-absorbent stock as coated book, litho label, etc., the first-down color can be made the same as for a regular two-color job. The second and third-down colors must be watched carefully. Generally, waxes and grease type compounds should be eliminated. The absorbency of the first-down film will be considerably less than that of the original sheet and these compounds are liable to cause a float on the surface of these colors with the attendant trouble of crawling and scuffing off. The last color down can be made like any ordinary ink providing the proper procedure has been followed in the previous 3 colors.

It is essential when ordering inks for color work that your ink maker be informed of the sequence of colors and the type of stock to be used on the job. Whenever possible, furnish a sample of the stock. Most ink manufacturers, if given the full particulars concerning the job the inks must do, have the knowledge and background to make non-crystallizing inks.

On rare occasions, however, and despite precautions taken by both printer and ink maker, there are bound to be some jobs on which the ink crystallizes. When this happens, your ink maker should be informed of the problem. Generally, the new ink to be run must be a special formula. Some jobs, if they have not crystallized too badly, can be saved by running an overprint size over the entire job.

Adjusting Non-Crystallizing Type of Ink

When it is necessary for the pressroom superintendent or pressman to adjust the working properties of a non-crystallizing type of ink, the following should be remembered:

1. If ink is chalking on the first-down color, add heavy varnish such as No. 3 or No. 5 and paste drier. This will hold the vehicle on the sheet and prevent it draining off into the paper.
2. If ink is drying too fast and hard, break up the film by adding wool grease or non-crystallizing varnish. These may be obtained from your ink maker. When printing absorbent stocks, petrolatum or vaseline may be added to the ink.
3. On hard stocks, such as metallic stocks or on second and third-down colors in four-color work, never add wax or grease compounds that may "float." If ink must be reduced, use a light bodied linseed oil, such as No. 00 varnish along with paste drier. If it is necessary to correct offset, a mixture of corn starch and No. 00 varnish will help. Never add over ¼ to ½ oz. per lb. of ink as more than this will cause caking and filling on the form.
4. On stocks requiring hard drying inks with maximum adhesion, check the first color carefully for drying and follow up with a second color as soon as possible, remembering that variations in the temperature and humidity will cause considerable difference in drying of the ink film.

Test for Wax or Grease Float

Here is an excellent test to determine if a wax or grease float is responsible for an ink not binding properly to the preceding color. After an impression has been made, take the sheet and immediately hold it over a flame or hot steam pipe. If the ink dries and adheres securely, it is a certain indication that a wax or grease float is causing the trouble. When this is true, the job usually can be saved by applying sufficient heat when running to break down the wax or grease film. This allows the ink to penetrate and bind securely to the preceding film.

In general, when it is necessary to run two, three and four-color jobs on single-color presses, give your ink maker all the information possible concerning the job. Follow the job very closely while it is being run, observing a few precautions in regard to doping the inks. Do this and it's surprising how easily and smoothly these jobs can be run off without trouble.

Use Only Approved Fire-Fighting Equipment

MOST mechanical executives, no doubt, have noticed that a considerable quantity of unapproved fire-fighting equipment has appeared upon the market since the outbreak of the war. The reason for this, of course, is increased industrial activity and the possibility of enemy aerial raids, even though they may be only of nuisance value. Executives may interpret announcements of these products in the publications which they read as implied endorsement by the editors of the publications. Director L. W. Hutchins of Safety Research Institute, New York, has issued a warning to executives in the interests of safety.

"Many of these devices have little fire protection value," said Mr. Hutchins. "In one way or another, all of them are inferior to approved equipment. Most of them are dangerous in that they impart a false sense of security.

Mr. Hutchins continued: "Printing plant executives can judge the merit of any fire-fighting device, without exception, by seeing whether or not it bears the approval label of Underwriters' Laboratories, Inc., or Factory Mutual Laboratories."

"Any manufacturer of fire protection equipment may apply to these bodies for approval. If he fails to apply, or if approval is denied, the efficacy of his product should be questioned. On the other hand, manufacturers who have obtained approval for their products invariably make a point of this fact in their advertising."

"With the increasing demand for industrial protection due to the restrictions that have been placed on the manufacture of certain kinds of fire-fighting equipment, it is not surprising that attempts should be made to fill the gap between supply and demand with inferior merchandise."

He asserted that there is still enough approved equipment available to take care of legitimate needs for increased protection. The two approval bodies mentioned above have further eased the situation by granting temporary certificates of approval, valid for the duration, for certain kinds of equipment which are now being made with non-critical substitute materials. In most cases, this temporary approval simply means that such equipment will pass standard performance tests but cannot be expected to stand up for as long as the devices made of more durable materials.

PRINTING PATENTS REPORT

Covering patents issued December 29, January 5, January 12, January 19

This data is compiled exclusively for *Printing Equipment Engineer* by Invention, Inc., is verified in the United States Patent Office, and is comprehensive of all patents in the field of each heading for the dates specified.

For copies of patents listed here, specify the patent numbers and send 10c each (stamps not accepted) to the Commissioner of Patents, Washington, D. C.

Binding, Cutting, Perforating:

2,308,628. MULTI-SECTION BOOK wherein the pages are divided into independent sets so that any page of one set can be read and associated with any page of the other set. This book is designed for use where a given diagram or drawing is common to a number of text pages which must be read and turned successively. In order to avoid the necessity of manually holding down the two sets of pages while reading, the invention provides on the inside of the front and back covers, at the corners, four expansible pockets, triangular in shape and with side walls provided with an accordian-like fold. The turned over pages are inserted beneath the edges of the pockets which hold them open and flat. Invented by John F. Rider, New York, N. Y. Unassigned. Application February 24, 1941. 1 claim.

2,308,804. COLLATOR for rapidly and economically collating sheets to be bound together in book form. A number of stock bins are arranged one above the other in staggered relationship for holding the sheets to be collated. Vacuum operated gripper feet for each bin simultaneously lift a sheet from each bin and move it onto individual feed conveyors which converge and bring all the sheets thus fed from the bins into proper stacked relationship. Device is said to be especially useful in small print shops, enabling the handling of manifolding business due to lowered cost of this equipment. Invented by Albert Dager, Los Angeles, Calif. Assigned one-half to Elias Shaheen, Los Angeles, Calif. Application November 25, 1940. 7 claims.

Composing Room Equipment:

2,307,068. SLUG CASTING MACHINE having substantially a new construction designed for economy, greater capacity and increased flexibility of operation. (See the following four patents which are on subsequent developments.) Improvements here deal especially with the slug casting mechanism. Instead of the usual four molds, the present machine provides for a selection of eight different molds, or more as desired. The changing from one mold to another is accomplished by a power operated mechanism through controls located at the front of the machine within easy reach of the operator. Other adjustments accompanying the substitution of one mold for another, such as the adjustment of the ejector blade width to correspond with the slot length of the selected mold, and the adjustment in the spacing of the trimming knives to correspond with the slot width of the selected mold, are effected automatically as the substitution of molds is made. Invented by James C. Plastaras, Laurelton, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application September 5, 1940. 155 claims.

2,307,069. TYPOGRAPHICAL COMPOSING, CASTING AND DISTRIBUTING MACHINE, for transferring composed lines through the machine. The timing of the machine parts is effected by a series of terminal controls which require that one part complete its function before initiating the operation of the next part. This makes for compactness as well as for safety since if one part fails, the operation of following parts is prevented. Individual power units are located close to the parts which they control, thereby eliminating many intermediate connections such as are necessary when the power is derived from a common unit. Many large castings are also eliminated, allowing more economical manufacture. While the output of the machine is about 10 slugs per minute compared with the usual 6, the time devoted to the actual casting of a slug is increased, resulting in an improved slug. Invented by James C. Plastaras, Laurelton, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application February 4, 1941. 206 claims.

2,307,070. TYPOGRAPHICAL SLUG CASTING MACHINE having improved vise jaw and justifying mechanisms. The vise jaw mechanism acts as a line quadding and centering attachment. When the machine is at rest both jaws are urged outwardly by individual power devices. However, after the line has been positioned between the jaws and the machine cycle inaugurated, the power devices reverse the forces acting upon the jaws, urging them inwardly to their casting positions. After casting, the forces acting upon the jaw are again reversed, to reestablish original conditions, so the composed line may be withdrawn from between the jaws for distribution. Invention also provides economy in manufacture by operating the jaws and the spaceband driver from individual power units, compactly mounted in the vise frame, under the control of a small, light, cam shaft unit which acts automatically to time the various operations of the parts. Invented by James C. Plastaras, Laurelton, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application March 13, 1941. 131 claims.

2,307,071. TYPOGRAPHICAL COMPOSING MACHINE having a power operated magazine shifting device which is especially useful where the machine is equipped with a number of magazines arranged to be moved upwardly and downwardly in the machine to bring one or another into operative relation with the assembling and distributing mechanisms. Invention provides a pneumatically operated magazine shifting arrangement, employing compressed air as the operating medium. The arrangement includes a cylinder and piston device connected between the magazine shift frame and fixed machine frame, with provision for supplying air at both ends of the cylinder so that air pressure can be used to lower the magazines as well as to raise them. Invented by James C. Plastaras, Laurelton, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application April 26, 1941. 51 claims.

2,307,072. TYPOGRAPHICAL COMPOSING, CASTING AND DISTRIBUTING MACHINE wherein each different function-performing part of the machine has its own power unit located close to it so that all large movable parts such as levers and the usual heavy cam shaft are eliminated. Generally each part of the machine is an independent assembly unit, built and tested as such in the factory, and shipped in knocked down condition for later assembly at the plant. Instead of being a heavy complicated casting, the framework of the machine is a fabrication of relatively light structural steel shapes, welded together in a boxlike frame structure, enabling the machine to be panel encased. The working parts are thereby enclosed, excluding dirt and promoting safety. Invented by James C. Plastaras, Laurelton, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application October 24, 1941. 26 claims.

2,307,185. MANUFACTURE OF CAP PORTIONS of molds for typographical slug casting machines. Process calls for roughing out the grooves in the cap portion of the mold in the exact shape desired but slightly under the dimensions of the finished grooves. Thereby spoilage of the blanks is said to be minimized, the cost of grinding is reduced, and the walls of the finished grooves are hardened

(*Continued on Page 45*)

You can trust these metals at any gauge - - - - - -

The quality of an engraving metal is more important than ever.

Why? Because with the new restrictions in pounds consumed, photoengravers are turning to thinner sheets — (.049" and .032") to obtain more surface area per pound.

And, a thin sheet must be an extra good sheet . . . there can be no margin for error. That is why Zomo Electric Zinc and A-Z Alloy are especially recommended today. These metals, made by the scientifically correct electric induction process, do not vary in composition, temper or gauge.

So — be sure to specify Zomo Electric Zinc or A-Z Alloy when ordering 16, 18, or 21 gauge sheets. You can get them from your metal supplier.

Late War Production Board News

Copper Engraving Plate Order Relaxed

THE recent prohibition on the use of copper engraving plates for printing greeting cards, business stationery, etc. was relaxed January 20 by the Director General for Operations in Copper Order M-9-c as amended. The amended order, however, requires engravers to sell as scrap a specific quantity of old engraving plates.

The order as amended December 26, 1942, stated that "the use of copper or copper base alloy engraving plates for engraving calling cards, greeting cards, social and business stationery and other similar purposes is prohibited after December 31, 1942."

The order as amended January 20 does not permit the use of new copper for these purposes. However, it permits plate engravers to use copper in their possession on December 31, 1942, as well as any old plates, on the same basis as other graphic art users of copper.

Each engraver is required to sell as scrap to a scrap dealer before the end of each calendar quarter, three pounds of old plates for each pound of copper products which he engraved for the purposes in question during that quarter.

This latter provision is expected to provide engravers with the incentive to persuade their customers to scrap their plates, thus creating a sizable tonnage for war production.

Electrotypers and Roto Printers

The amended order also gives the electrotyping and rotogravure industry an additional month in which to comply with the provisions requiring use of a certain percentage of scrap metal in its products.

The scrap percentages specified in the amended order issued December 26 were: For January, 33⅓%; for February 50%; after February, 75%.

The Copper Order M-9-c as Amended on January 20 contains the revised scrap schedule percentages which are now as follows: For February, 33⅓%; for March, 50%; after March, 75%.

Commercial Printer Can Use Either L-241 Schedule

PROVISIONS of Limitation Order L-241 governing the use of commercial print paper were clarified on January 25 through the issuance by the Director General for Operations of L-241 as amended.

As originally issued, L-241 listed two schedules by which a printer could put paper into process during any quarter of 1943. One allowed him to use 22½% of the gross weight of paper he used during the entire base period, 1941; the other allowed him to use in any quarter of 1943, 90% of what he used during the corresponding calendar quarter of the base period.

The wording of the order, however, would have forced the printer to accept the schedule providing the lowest tonnage. The amended order allows the printer to use either schedule.

The amended order also makes it clear that limitations of this part of the order apply to "printed matter" as defined in paragraph (a)(2) of the order.

L-226 Does Not Apply

APPARENTLY, the purchase of electrotypes and copper and zinc photo-engravings are not covered by the provisions of WPB's recent Machinery Order L-226. The confusion no doubt existed in the minds of some executives because they were under the impression that L-226 replaced the A-10, P-100 rating, under which they have been purchasing printing plates as operating supplies because they are not physically incorporated in the finished product.

The definition of "operating supplies" as given in Limitation Order L-226, is as follows: " 'Operating supplies' means small pieces of *equipment* not normally considered capital items *peculiar to and used exclusively in the Graphic Arts Industry* . . ." It is understood that this definition, which is a part of the printing machinery, operating supplies and replacement parts order, should not be construed to include electrotypes, stereotypes and copper and zinc photo-engravings. L-226 is applicable only to printing machinery (capital equipment), operating supplies as defined in the order, and to machine replacement parts. It should be noted, too, that while lists A and B incorporated in the order provide regulations for the manufacture, delivery and purchase of plate-making equipment, these Lists do not specifically mention the printing plates manufactured with the equipment.

The use of the A-10 under P-100 rating should be continued on purchase orders for electrotypes and photo-engravings.

According to a recent ANPA Bulletin, the War Production Board is quoted as stating, in reply to a letter of inquiry, that "So far as the Printing and Publishing Division is concerned, all that is necessary for a consumer to do to procure operating supplies and replacement parts under Limitation Order L-226, is either to return an equivalent number of used parts or to certify that he has scrapped an equivalent number of used parts. So far as this Division is concerned, no preference rating is required. Consumers may continue to put the A-10 rating under P-100 on their purchase orders if they choose. It is our belief that this will no longer be necessary."

In the letter it is also pointed out that there are some orders issued by other divisions of WPB requiring the use of a rating higher than A-10 on purchase orders for certain items. For example, Order E-2-b, issued by the Tools Division, requires that a Rating of A-9 or higher must be furnished on purchase orders for router bits and other cutting tools made of high-speed steel. Another order, is E-7, requires a rating of A-9 or higher on purchase orders for certain varieties of metal-cutting saws.

In the bulletin it is also called to the attention of ANPA members that the A-10 rating under P-100 still is in force and has not been revoked. The A-10 rating is to be used on purchase orders for repair, maintenance and operating supplies.

Magazine Purchase Does Not Carry Right To Tonnage Quota

THE purchase of a magazine does not automatically carry with it the right to its tonnage quota, the Printing and Publishing Division of the War Production Board made clear on January 26 in a statement issued on the acquisition of tonnage paper quotas in the magazine field. The statement was issued because some misunderstanding apparently exists in the magazine publishing field regarding acquisition of paper tonnage quotas by purchasing a magazine which was published during 1942, discontinuing its publication, and using its paper tonnage to maintain other magazines owned by the buying publisher.

On February 17, 1942, WPB issued an official interpretation with respect to the assignability of quotas. "This ruling makes it clear," said W. J. Risley Jr., Chief of the Magazine and Periodical Section of the Printing and Publishing Division, "that the purchase of a magazine does not automatically carry with it the right to its tonnage quota except under circumstances which would be very unusual in the magazine publishing field. Any publisher contemplating the purchase of a magazine should discuss the question of paper quota in advance with the Printing and Publishing Division.

"Our latest information indicates that the supply of printing paper will become increasingly critical, and that further restrictions may become necessary within the next two or three months. This means that there will be very little paper available for the launching of new ventures or the expansion of existing ones."

Thermoplastics Order Revised

THE list of civilian products for which thermoplastics may no longer be used has been revised under General Preference Order M-154, amended in its entirety on January 9 by WPB. This order cancels the former Order M-154.

The majority of uses on the prohibited list were originally cut off from supplies of thermoplastics on September 1, 1942. Some additions have been made to this list. Some items are now allowed that were prohibited previously, providing the material is available, to fill orders bearing preference ratings.

Limitation provisions of the revised order do not apply to the vinyl resins, including vinylidene chloride, acrylate and methacrylate resins, and nylon, as they are controlled by other WPB orders.

As a means of providing relief to civilian industry, thermoplastic scrap does not fall under the limitation provision, provided it is of a quality which cannot be re-used for the permitted product for which it was originally obtained, and provided it does not exceed in quantity 15% of the original weight of thermoplastics from which it was obtained.

Thermoplastics are defined in the order as the following synthetic resins and cellulose derivatives, whether plasticized or unplasticized (except in the case of ethyl cellulose and cellulose nitrate): Cellulose acetate, cellulose acetate butyrate, plasticized cellulose nitrate (except that used in explosives and protective coatings), plasticized ethyl cellulose, and polymers of styrene.

A long list of prohibited items (with some exempted items for war use) is appended to the order. Among those of interest to the printing industry which have been prohibited by the new amended order M-154, are: Badges, emblems and campaign buttons (war use exempted); calendar cards; greeting cards and components; placques for display or decorative use; plastic book binding—comb or spiral type (war use exempted); price tags—except for meat and dairy products; stationery supplies including desk sets, ink stands, ink wells, pocket pencil sharpeners and rulers.

Tin Order Amended

JANUARY 9, WPB amended and reissued Tin Order M-43, which supersedes previous M-43 orders. So far as the printing industry is concerned, the provisions are substantially the same. The provision that only secondary tin may be used in the making of printing plates and type metals is retained, as is the provision that the use of tin for such purposes is limited to 75% of the quantity used in 1940. Now limited to 16% by weight is the tin content of electrotypers' solder foil (tin foil). The amount of tin which may be used in the manufacture of electrotypers' tin foil is limited to 35% of the quantity used during 1940. In the manufacture of solder, new restrictions are incorporated. For most purposes, the tin content of solder is limited to 21% by weight. The use of tin in bronze and babbit metals also is restricted.

Tying Wire Order Issued —Then Amended

ON January 25, WPB issued Conservation Order M-261, which limits metal strapping (including wire) on containers and bundles to certain kinds of commercial uses. The original order was amended on February 4 to permit using metal wire or strapping for bundling newspapers and some other commodities in light bundles. The order applies to iron, steel, or other metal wire or band reinforcements or closures which measure 12 in. or more in length, for fastening material into bundles or for shipping containers. Among the uses not prohibited is the use of strapping (wire) for baling waste paper and the fastening or blocking of material to skids or in vehicles or vessels.

Of direct interest to the printing industry are the provisions that no person may use commercially any metal strapping for containers or bundles unless: (1) Weight of container and contents exceeds 90 lbs.; (2) Net weight of the contents exceeds 0.058 lbs. per cu. in.; (3) Use is required by regulations or orders of Interstate Commerce Commission; (4) Container and contents are to be delivered to the Armed Forces, Maritime Commission, or War Shipping Administration and are required by such agencies; (5) Shipment is for export outside of both the U. S. and Canada.

It is understood that dealers are currently requiring the AA-5 or higher rating on purchase orders for steel tying wire and steel strapping; also, the end use must be indicated on the purchase order in addition to the priority rating.

Order Amended February 4

Conservation Order M-261 discussed above, was amended on February 4 to remove the restrictions on the use of metal strapping and wire on specified types of bundles. Letters received after the order was issued indicated it was too drastic. The amendment permits the packing of such products as newspapers, metal pipes, wood box parts, and knocked-down wooden boxes and similar commodities in light bundles fastened by metal strapping and wire.

Photo-engraving Zinc and Copper Requirements Tighten

IT seems that the requirements for obtaining photo-engraving metals will be tightened shortly. According to a reliable source, the present A-10 rating which photo-engravers have been placing on their purchase orders shortly will not be sufficiently high to secure copper and zinc plate stock.

An announcement was mailed out recently by Edes Manufacturing Company that after February 20 all orders received by that firm for photo-engraving metal must bear an A-1-a or better rating. In making the announcement, however, Edes states it recognizes that some of its customers might suffer hardship through delays in securing WPB approval of their PD-1-a applications. Accordingly, the Edes Manufacturing Company will honor A-10 endorsements for eight days after February 20, or until March 1.

The company suggests that photo-engravers apply on a PD-1-a form for enough metal to last during a 60-day period. After being filled out, and to secure prompt WPB attention, the PD-1-a form should be sent to PD-1-a Section, War Production Board, Washington, D. C. Blank PD-1-a forms may be secured from the local WPB office or from your stationer. In the announcement it is stated that "Photo-engravers operating under the PRP Plan already have priority ratings higher than A-1-a, so this notice does not affect them immediately."

Conservation Orders

In the announcement, the Edes Manufacturing Company summarizes WPB orders with respect to the use of copper and zinc, as follows: "The consumption of photo-engraving zinc is limited by Amendment No. 1 to General Conservation Order M-99 (Obsolete Plate Order —Ed.) issued Nov. 13, 1942. From Feb. 15 to April 1, 1943, consumption is limited to 25% of the consumption of the *entire* first quarter of 1941. During each subsequent quarter *consumption* must be not more than 50% of the corresponding quarter of 1941.

"The copper restriction is based on the corresponding quarter of 1940 through M-9-c as Amended Jan. 26, 1943. Consumption in pounds each quarter is limited to 60% of the corresponding quarter in 1940. Notice that the copper basis is 1940, whereas the zinc basis is 1941."

CMP-4B for Copper

After April 1, 1943, the Controlled Materials Plan will be in force. The buying of copper products will be affected immediately. Word received as we go to press from Edes Manufacturing Company indicates that it will be necessary for photo-engravers to apply on form CMP-4B for copper plate stock for delivery after April 1.

L-226 Amended

ON February 10, Printing and Publishing Machinery, Parts and Supplies Order L-226 was amended by the War Production Board. The principal changes made in L-226 as published in the January issue of *Printing Equipment Engineer*, are as follows:

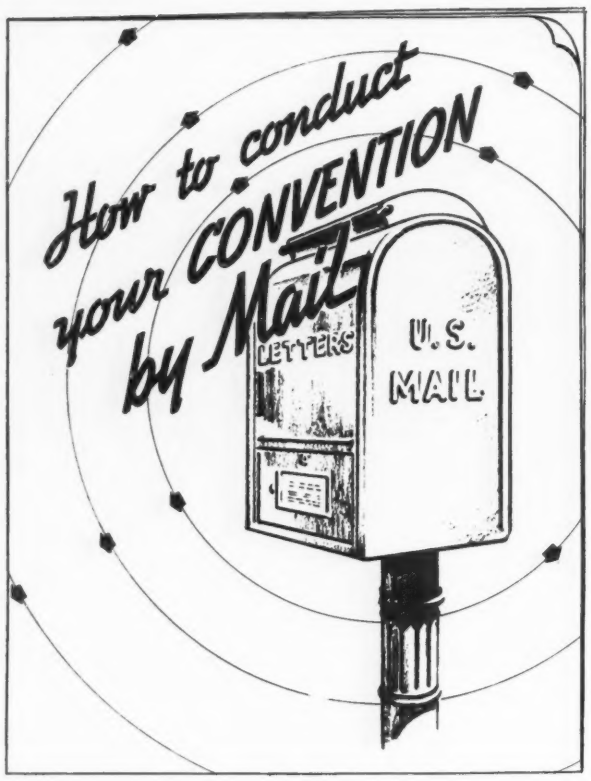
An additional paragraph is now a part of the section of the order related to exempted transactions. The delivery and acquisition of a single piece of graphic arts machinery having a sales value of $25 or less, is now an exempted transaction.

The stipulation is retained in the amended order that no producer or distributor shall sell or deliver any operating supply or replacement part to a consumer who fails within 30 days after receipt of a supply or part ordered on or after January 4, 1943, to deliver to said producer or distributor a used part of similar kind or size for each new replacement part or operating supply delivered to the customer.

The alternative requirement that the purchaser must certify to the producer (manufacturer or distributor) within 30 days that he has disposed of the equivalent displaced parts, has been amended so that the purchaser must certify concurrently with the placing of the order for supplies or parts that within 30 days after their receipt he will dispose through scrap channels of a used part of similar kind and size for each new replacement part or operating supply delivered to him.

The original order contained a provision that where the representative of a manufacturer comes into your plant to install a new part you were to deliver to him the old part which was replaced.

(*Continued on Page 30*)



Miniature reproduction of booklet cover "How To Conduct Your Convention By Mail", prepared by Graphic Arts Victory Committee to help those groups who are not justified in holding annual meetings because of war conditions. Booklet is letterhead size, contains 16 pages and is well illustrated. Can be obtained from the committee at National City Bank Bldg., Madison at 42nd St., New York, N. Y.

Conventions by Mail

For Organizations, Sales Agencies, Commercial Firms and Other Groups

IN common with other industries, Graphic Arts executives are convention minded. These annual conventions are oases in our workaday world. They bring to us the latest thoughts of those who have found better ways of doing things in our industry. The Graphic Arts Industries, particularly, are blest with many men of investigational turn of mind who are always willing to pass along ideas that will help us in our profession. While the Graphic Arts Industries do not maintain formal investigational and research programs, it might be said that the convention is the best possible substitute for a formal research program.

It appears that many of the usual annual gatherings of organizations, sales agencies and commercial firms will be foregone this year because while they are essential to the welfare of civilian industry, some of them cannot be construed as contributing in an important way to the winning of the war. This is the yardstick which should be employed in deciding whether or not *your* particular group will hold a meeting in 1943.

We rather like the way Director Joseph B. Eastman of ODT puts it up to each body—he leaves the decision to the individual group as to whether or not a convention shall be held.

Quoting Mr. Eastman, from the foreword of *How To Conduct Your Convention By Mail*, he makes the statement: "I suggest that in considering the question they (officers and members) ask themselves whether the proposed meeting or convention will contribute in an important way to the winning of the war. In other words, will the gathering help to shorten the war? If the answer is no, I strongly urge that the convention plans be abandoned."

For the officers and members of those associations who might not be justified in holding a convention this year in the light of ODT Director Eastman's request as quoted above, we heartily recommend to them the 16 page booklet prepared by the Graphic Arts Victory Committee. The title of the booklet is *How To Conduct Your Convention By Mail.*

In the booklet, as its title suggests, will be found instructions and suggestions for conducting mail conventions. One of the advantages put forth is that the theme of the convention can be put across effectively because delegates and salesmen are able to read all of the convention material at their convenience at home or office without the usual convention distractions.

In a convention-by-mail, the speakers are selected as usual except that they will submit manuscripts of their speeches to be included in the mailings to members. In this way, if a speaker's oral delivery is dull or he cannot hold the attention of his audience because of speaking inability, none of the effectiveness of his material is lost. The speakers' manuscripts, of course, would be edited before publication so that no word that is not helpful or of practical value will be permitted to reach the convention audience.

Instructions are given as to frequency of mailing of the convention speeches, how to present them effectively, the use of showmanship to make the presentations interesting, and suggestions for planning convention features. Other suggestions given are: Idea Exchange Follow-up to Convention, Changing Rules for Election of Officers, Financing Association Conventions, and Local Group Meetings.

To demonstrate that the mail convention idea is feasible, four case histories of such conventions are discussed in the booklet.

Concrete ideas for employing showmanship in convention mailings are presented in the center two-page spread of the booklet. Novel die-cut announcement ideas to be used in announcing conventions by mail, convention openings, and for making nut-shell digests of speeches are illustrated and described. Tickets for two and smokes for the boys, as presented at regular conventions are suggested. Talking machine records bearing recordings of keynote addresses or opening remarks by presidents and sales managers of companies are suggested as a means for making mail conventions effective.

L-226 AMENDED

(Continued from Page 29)

This provision has been deleted in the order as amended on February 4.

Excluded in the February 4 amended order L-226 are sales of operating supplies and replacement parts to:

"(ii) Any corporate, administrative or other division or agency of the United States or of any state or territory of the United States which is forbidden by law from making such disposal of replacement parts or operating supplies;

"(iii) The Army, Navy, Maritime Commission, War Shipping Administration or consumers outside of the continental United States;

"(iv) A distributor or other producer for resale only in that form."

Composing machine molds has been deleted from the capital equipment items in List A. Also, in the capital equipment items in List A, composing machine matrix fonts has been changed to read: "Typesetting and typecasting matrices of a face not offered for sale by the manufacturer prior to January 1, 1943."

In Schedule B, which consists of listings of replacement parts and operating supplies, the term "replacement matrices" has been changed to read: "Typesetting and typecasting machine matrices."

Leads, rules and slugs, replacement foundry type, borders, ornaments, and the like have been deleted from Schedule B, replacement parts and operating supplies.

The Kid goes all out numbering for profit

★ Pop, I've an Idea.

● What's that?

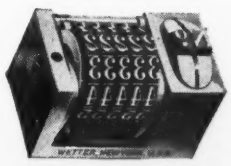
★ I'm gonna number myself among the armed forces.

● For the profit of Uncle Sam?

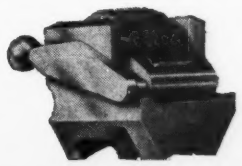
★ Yep! and the Four Freedoms.

● That's a numbering job that can't be beat. But now who'll listen to me rave about Wetter machines, and the way they never smudge, or wear out, or . . .

★ That's all in the cards, Pop. We'll keep in touch and speaking of a touch, how about a ten-spot so I can buy some more War Stamps?



Wetter Lock-Wheel
One of many models



Wetter Rotary
One of many models

WETTER NUMBERING MACHINE CO.
ATLANTIC AVE. & LOGAN ST., BROOKLYN, N. Y.
Sold by all dealers and branches
AMERICAN TYPE FOUNDERS

3360

VASTLY IMPROVED
VULCAN ROLLERS
wait beyond War Horizons

ALTHOUGH heavily engaged in war production, Vulcan has earmarked many of its important new discoveries for use in making peacetime rollers. There will be mighty improvements over anything you have yet seen.

Just as soon as peacetime production is resumed, these greatly advanced Vulcan rollers will be available to printers everywhere—assuring presswork whose quality and dependability will be enhanced far beyond present high standards.

VULCAN PROOFING CO.
First Ave. and Fifty-Eighth St., Brooklyn, N. Y

3586

Equipment and Supply Notes

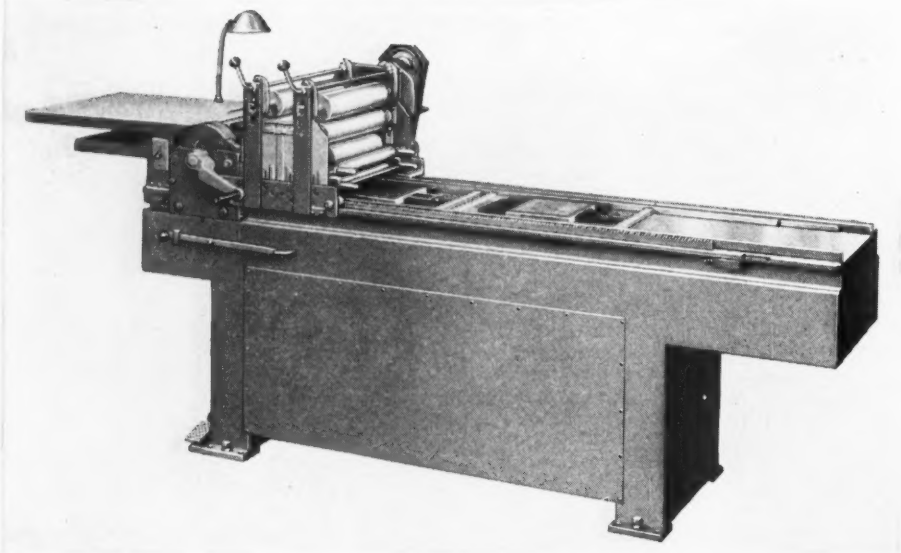


Fig. 1.—View of Vandercook two-color wet proving machine which is intended for use by letterpress color printers, engravers, electrotypers and ink makers. Manufacturer states the design of the press is such that regular continuous production press operation is simulated—a fraction of a second elapses between printing of first and second impressions and the plates are inked immediately ahead of each impression. The impression cylinder is hand-operated.

Vandercook Wet Proving Machine

For letterpress color printers, engravers, electrotypers and ink-makers, the Vandercook Wet Proving Machine has been announced by Vandercook & Sons. This press has been designed in two and four-color models. Its construction and operation are such that regular production press operation is simulated without drying intervals between colors. Thus true wet proofs are obtained, manufacturer states, since the operation of the machine permits a fraction of a second between impressions for each color and the plates are inked immediately ahead of the impression.

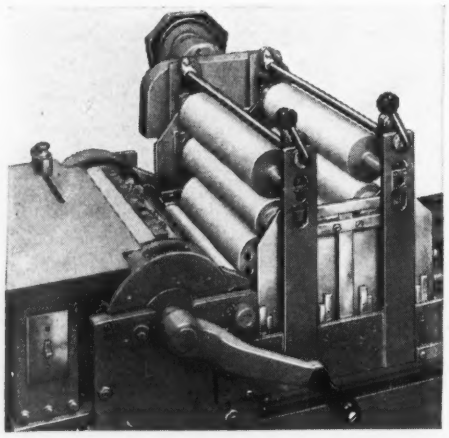


Fig. 2.—Close-up of power-driven inking units on Vandercook two-color wet proving machine. Each unit automatically inks the plate or form in its proper color through a mechanical trip. The form rollers also may be raised manually if desired.

The illustrations show a laboratory size two-color Vandercook Wet Proving Machine with power inking and hand-driven impression cylinder. One of these presses has been in use for over a year by the Frederick H. Levey Company, for testing wet printing inks.

A four-color Vandercook Wet Proving Machine for plates up to 25 in. by 21 in. will be available after the war. The four-color press is completely power operated and is equipped with chain-driven web-type automatic frisket that eliminates separate inking operation when necessary to prove originals with dead metal. The four-color machine is equipped with an entirely new type of metering ink fountains and automatic registering plate bases. In operating the four-color machine, the sheet is fed to grippers on the single impression cylinder (registered for margins only). The power is then turned on and the cylinder and inking units travel over the plate beds at a speed comparable to production presses. The inking units are automatically tripped over all but one of the plates. For progressives, the impression cylinder may also be automatically tripped over any of the plates. Inking and printing is in one operation with plates inked immediately ahead of impression.

Enclosed Electric Counter

Developed especially for use where dust, moisture or other conditions require protection not afforded by the normal enclosure. Manufactured by Production Instrument Company. The device is comprised of a Wizard electric counter in dust-resistant enclosure of pressed steel, with baked enamel finish.

The counter is actuated by any suitable electric switch, relay or photo-electric unit and may be located at any distance from the actual source of count. For example, the actuating switch may be located for operation by parts passing from a machine and the counter mounted near the operator, or the counters can be grouped to give a centralized up-to-the-second count on operations or movements throughout the plant.

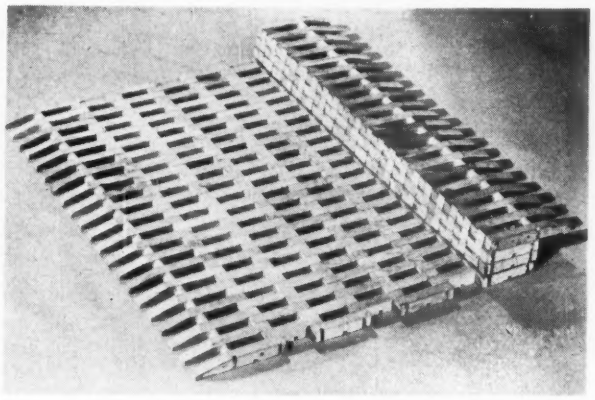
Operates at speeds up to 600 counts per minute with current draw of less than 4 w. The continuous-duty coils are unharmed if current remains on.

One complete turn of knob resets all number wheels to zero.

Made in four and six digit models for any voltage up to 220 a.c. or d.c.

Wood Matting

The development of substitute materials in the manufacture of matting became necessary when rubber and other materials were put on the critical list.



Wood is utilized by American Mat Corporation in fabricating this floor mat which follows any slight irregularities in surface of floor.

The research staff of the American Mat Corporation developed a number of substitutes. In some instances the new types stood up even better than the originals.

A recent development, Flexible Wood Link Matting, has been announced by American Mat Corporation. This mat is constructed of wood links. It is light in weight and can be rolled or folded up for handling and cleaning. It follows the contour of the floor.

The ends of Flexible Wood Link Matting are beveled to reduce the danger of tripping. It comes in natural wood color. The mat is 1 in. thick, and is furnished in stock sizes: 18 in. by 32 in., 24 in. by 38 in., and 30 in. by 44 in., but can also be obtained in special sizes of any length and up to 36 in. in width.

Flexible Wood Link Matting may be used back of counters, in factories, around machinery, on oily and greasy floors.

To help in conserving present matting, through proper care, American Mat has set up a special service and advisory department for the duration. Detailed literature is available for the asking.

Shift-O-Graph Perpetual Work Shift Schedule

As its contribution to the national war effort, the business engineering firm of George S. May Co., May Bldg., 2600 North Shore Ave., Chicago, has published the Shift-O-Graph. It consists of a 10 in. by 10 in. heavy cardboard body, between the two sections of which is mounted a rotating disk. Two died-out sectors of a circle in the body permit reading segmental graphs on the surface of the rotating disk.

The graph has been published for firms who operate on a 24-hour basis and shows the times on and off of crews under four different plans.

It is stated that it is frequently necessary for companies to operate their equipment as continuously as possible. One hundred per cent plans, however, have many drawbacks. The four plans presented on the Shift-O-Graph result in a high degree of activity and yet provide fair and equitable treatment of employees.

Plan A shown on the graph, comprehends 95.8% Activity, 161 hours per week. Three crews rotate over two shifts. Two crews work three days 11½ hrs. and two days 11 hrs. each week. One crew works four days 12 hrs. each week. Each crew works four consecutive days and are then off two consecutive days and repeat. Each crew works five days per week for four consecutive weeks, and then works four days for two consecutive weeks and repeat. Crews do not work Sundays during the weeks they work four days. Each crew has one-half hour for lunch. All employees are treated alike.

Plan B is the same as Plan A except all crews do not rotate. This plan uses a swing crew. Crews A and B always work the same shift. Crew C or the swing crew, rotates.

Plan C comprehends 93.75% Activity, 157 hours per week. This plan uses four crews rotating over three shifts. Each crew works 7½ hrs. per day. Three crews work five days per week; the fourth crew works six. Each crew works six days every third week; other weeks they work five. Each crew works fifteen consecutive Sundays and are off five consecutive Sundays, and repeat. All employees are treated alike. Each crew works five consecutive days and are off two, then five more consecutive days and off two, then five consecutive days and off one, and repeat. Each crew has one-half hour for lunch.

Plan D is the same as Plan C except all crews do not rotate. Crews A, B, and C work the same shifts each week. Crew D or the swing crew rotates.

Instructions for operating the instrument, together with descriptions of the plans are printed on the back of the instrument.

Shift - O - Graphs will be furnished gratis to executives requesting them on their company letterhead.

Color Register Control Broadened—Lamp Data

IN Guy Bartlett's *Some Electrical Developments of 1942*, published by the General Electric Company, some comment is made about electrical developments which will be of interest to mechanical executives. One of these is related to rotary press color printing. A method has been developed to combine, by means of photo-electric register control, the output of two rotary color presses. The inside 8-page section cannot be seen by the inspector, but his inspection is not required; 16-page color supplements,

Rouse
BAND SAW

Rouse
VERTICAL MITERER

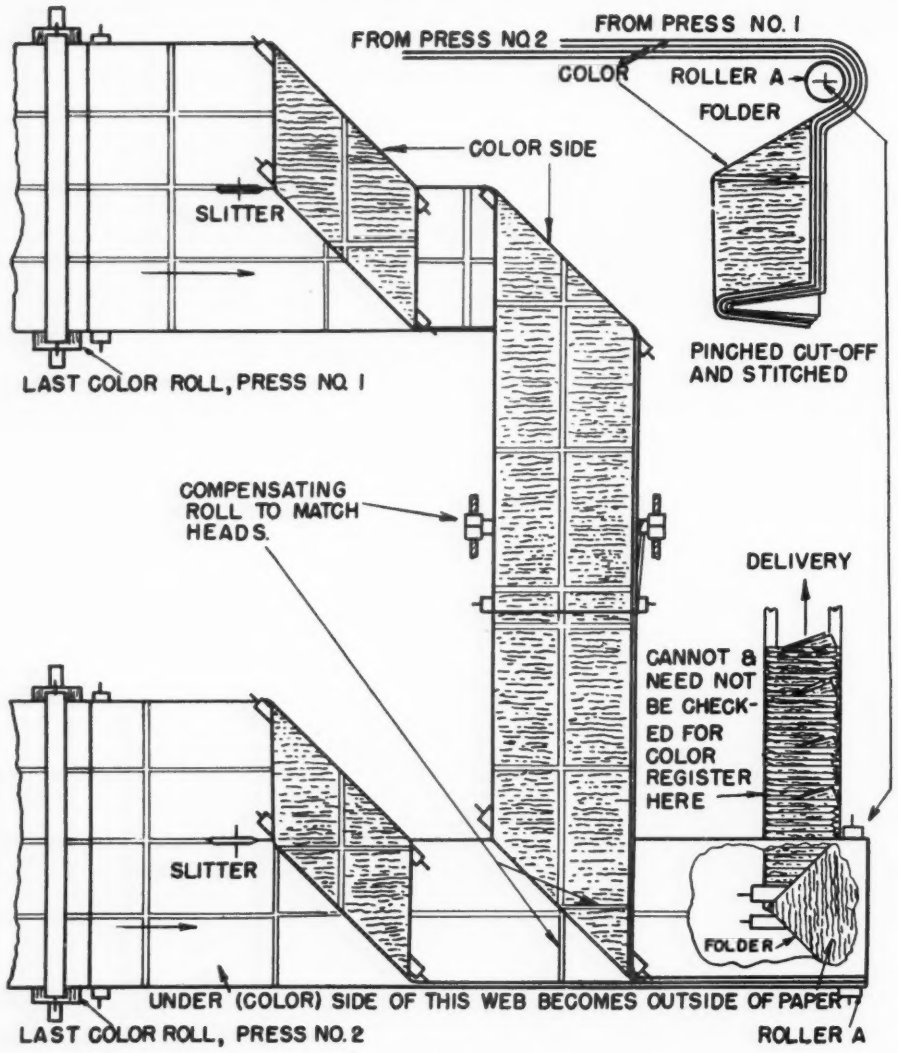
Many printers and publishers are partially solving their help shortage problems through the installation of available labor-saving equipment.

Rouse Band Saws and Rouse Vertical Miterers are saving hundreds of man-hours daily for leading printers and publishers throughout the country.

If your composing room has become a bottle-neck, and there is definite need for additional equipment due to man-power shortage, you should be able to get delivery on Rouse Band Saws and Rouse Vertical Miterers in a short time.

You should get the facts now. Your request for information will not obligate you in any way.

H. B. ROUSE & COMPANY
2214 NORTH WAYNE AVENUE, CHICAGO, ILLINOIS



This interesting schematic diagram shows the hookup whereby the output of two rotary color printing presses (Nos. 1 and 2) are being combined into one folder. With General Electric automatic photo-electric register control. The inside 8-page section cannot be seen by the inspector, but his inspection is not required. Thus, 16-page color supplements, all folded, stitched and trimmed as a book are handled automatically since color registration is maintained on both presses.

all folded, stitched, and trimmed as a book can be handled automatically since color registration is maintained on both presses.

In the illumination field, Mr. Bartlett describes conservation measures taken in lamp manufacturing.

"Aside from the tungsten filament," he states, "the incandescent lamp at the end of the year had no metal fabricated into the finished lamp that had not been changed. Brass bases gave way to brass-plated steel bases; iron and nickel-plated iron were used instead of the copper and nickel wires formerly employed, and much tin was released for war requirements by new formulas for solder. Approximately half of the lamp types were removed to effect maximum savings of critical materials; and the standard 100 w. filament lamp was reduced in bulb size, thereby conserving packing material and transportation cost, and enabling the design of smaller fixtures and reffectors.

Fluorescent lamp developments were such that the rated life performance of the 100 w. size was extended to 3000 hrs. Despite the necessity for using glass tubing of less efficient light transmission, rated light outputs were maintained through an improvement in the phosphor for coating all fluorescent lamps. Newest of fluorescent circuits designed to save critical materials was one to operate four 100 w. lamps from a single ballast.

Machinery Age and L-226

In a release published by WPB on January 7, a number of questions are asked and answered relative to Machinery Order L-226. One question is as follows: *What age machinery may be sold only upon an approved order?*

The answer is: Machinery delivered to its original owner subsequent to May 1, 1937.

The buyer files Form PD-556 with WPB to secure approval of the order for the machine.

Color of Plastic Back Indicates Zinc Gauge

Edes Manufacturing Company announces that after March 15, a plastic resin back coating will be supplied only on order to users of its Regular and Hard Zinc and Triplemetal photo-engraving plate stock. The new acid-resist coating is called Edes V-Kote. The new V-Kote eliminates asphalting, shellacking and other preparatory work. Manufacturer states the coating adds 0.001 in. thickness to the metal, but adds considerably to the rigidity of the zinc, and is especially desirable in the thinner gauges.

The V-Kote will be supplied in two colors and white, *i.e.*, a different color for each of the three current gauges of zinc plate stock, as follows: The 0.032 in. (21 gauge) plate stock will be supplied with white back; the 0.049 in. thickness (18 gauge) will be supplied with red back, and the 0.064 in. thickness (16 gauge) will be supplied with blue back.

Manufacturer also states that the preheating of the metal when applying the V-Kote at the factory reduces stretch and assures better color register for the photo-engraver.

Complying with L-226

MECHANICAL executives, of course, realize that the War Production Board's intent in requiring that replaced machine parts and operating supplies either be returned to the manufacturer or distributor within 30 days, or the purchaser must certify concurrently with placing the purchase order that he will dispose of the parts through the usual scrap channels within 30 days, is to get scrap metal into war production. Several manufacturers have notified their customers of the mandatory stipulations set forth in Order L-226. Among these are Lanston Monotype Machine Co. and Linotype Parts Co.

Exempted from the stipulations that a purchaser of replacement parts must return within 30 days the displaced machine parts in exchange for the new ones, or the purchaser must certify concurrently with the placing of the order for supplies or parts that within 30 days after their receipt he will dispose through scrap channels of a used part of similar kind and size for each new replacement parts or operating supply delivered to him, are the following:

"(ii) Any corporate, administrative or other division or agency of the United States or of any state or territory of the United States which is forbidden by law from making such disposal of replacement parts or operating supplies;

"(iii) The Army, Navy, Maritime Commission, War Shipping Administration or consumers outside of the continental United States;

"(iv) A distributor or other producer for resale only in that form."

Magazines Now Included in Communication Services

CERTAIN occupations were classified as essential activities in the communication services in Occupational Bulletin No. 27 issued on October 12, 1942 by Lewis P. Hershey, director of the National Selective Service System. At that time, magazines were not included in the communication services.

According to word received from Executive Vice President George C. Lucas of the National Publishers Association, the Occupational Bulletin has now been amended to include magazines.

The amended definition of communication services is as follows:

(a) COMMUNICATION SERVICES: Magazines of general circulation which are devoted primarily to the dissemination of public information; newspapers and news syndicates; production of motion pictures (including technical and vocational training films for the Army, Navy, and war production industries); protective signal systems which supplement fire and police protection to military, public and private industrial and commercial establishments; radio broadcasting; radio communications (radiotelephone and radiotelegraph); submarine cable; telegraph; telephone; television.

The detail of the occupations covered by this inclusion of magazines is covered as follows:

Magazines of general circulation which are devoted primarily to the dissemination of public information, newspapers, and news syndicates'.

Accountant, Cost	Monotype Keyboard Operator
Editor, Managing	Overlay Cutter
Editor, Manuscript (magazines)	Photo-engraver
Editor, News	Photographer
Electrician (all around)	Photo-lithographer
Electroplater	Pressman (all around)
Electrotyper	Press Plate Maker
Engraver, Lithographic	Printer (all around)
Foreman, Printing Crafts	Stereotyper (all around)
Linotype Operator	Stoneman
Manager, Employment and Personnel	Transferrer, Hand
Maintenance Mechanic (printing equipment)	War Correspondent
	Wirephoto Operator

All printing craft occupations listed under this section are also intended for application to the publication of technical, scientific and engineering journals and books. See Occupational Bulletin No. 43, "Technical, Scientific, and Management Services" for a listing of the editorial occupations of this activity.

Watching Matrix Action in Assembler Chute

By ANTHONY J. STANZIONE*

*Linotype Machinist, Grit Pub. Co., Williamsport, Pa.

SOME time ago, I had trouble with matrix action in the assembler of a Linotype. The idea occurred to me that if I could watch the matrix action in the assembler chute the trouble could be overcome easily. For this purpose, I made an assembler chute cover from 1/16 in. thick clear celluloid stock. This was substituted temporarily for the metal chute cover which is supplied with the machine. As the result of being able to watch the action of matrices as they pass through the chute and over the rails, I have been able to locate faulty matrix action which might otherwise have gone undetected.

With such a cover and the very fine article by Quido E. Herman in the October issue of *Printing Equipment Engineer*, I believe every machinist can eliminate all assembler trouble in line-composing machines.

What the Teletype does for telegraph communication

Teletypesetter will do for composing machines

[when the war is won]

THE early telegraph was the marvel of that era. Yet by adding keyboard sending equipment and automatic printers, we today enjoy far greater speed, far more efficiency.

Users of Teletypesetter find that the same holds true with machine composition. After adding Teletypesetter equipment, they report 350 to 400 lines per hour as all day averages on large-volume straight-matter.

Today war work has deferred the production of Teletypesetter equipment. But after Victory, it can give *your* composing machines new speed and efficiency.

TELETYPESETTER CORPORATION, Chicago, Illinois.

TELETYPESETTER
REG. U. S. PAT. OFFICE

Encyclopaedia Given To University of Chicago

In January, Chairman of the Board R. E. Wood of Sears, Roebuck and Co., Chicago mail order house, announced that the 175 year old Encyclopaedia Britannica business had been presented as an outright gift to the University of Chicago. President Robert M. Hutchins of the University stated that although the gift places the university in the commercial publishing industry as owners of a going enterprise, no changes in the present management of Encyclopaedia Britannica, Inc., are contemplated. Offices will be continued at 20 North Wacker Drive, Chicago.

O. E. Petry who has been associated with the Nashville (Tenn.) *Banner* and *Tennessean* as composing room superintendent, is now serving the Beaumont (Tex.) *Enterprise* and *Journal* in like capacity.

Your Wartime Roller

Folder issued by Ideal Roller & Mfg. Co. contains discussion about Ideal Typo vulcanized oil rollers in printing presses for use as distributors to assist in the rubber conservation program without impairing printing quality. Attention of the reader is also called to new government ruling that no new roller cores can be supplied unless certification is made that the old cores have been disposed of as specified in the government order. Ideal Typo rollers are made from domestic materials which are not needed for war production.

LETTERS
TO THE EDITOR

News Ink Coverage

DEAR EDITOR—Referring to the "Gay 90s" pressroom operation discussed in the Letters To the Editor column, January issue of *Printing Equipment Engineer*, I don't believe Joe Addison was far off in stating he used up 2.50 to 2.70 lbs. of ink per 1000 eight-page papers in the coal scuttle days when press fountains were filled by hand.

Supplementing Joe's remarks, many papers at that time were made up 9 col. width, 13 pica measure, 235 lines long; Others were "long-legged" papers with columns varying from 21 in. to 27 in. long with eight 13-pica columns.

The newsprint then was just a fair grade of blotting paper. At its best, printing a newspaper is simply a blotting process. Then it was a blotting process at its worst, and news ink also wasn't exactly the quality product it is today.

Now, however, with more standard supplies and equipment and better trained mechanics, we are able to establish a certain relationship between paper consumed and ink consumed. To that end, I think any pressman printing a page containing eight 12-pica columns, 22½ in. long is well satisfied if he secures a trifle over 500 eight-page papers per lb. of ink. Lesser column lengths, of course, will permit a correspondingly greater ink coverage.

The ink coverage problem is a great deal like the page cost problem in the composing room—you just don't seem to be able to establish an accurate yardstick by which to measure it. It seems logical that with conventional makeup there should be a common ground on which paper used and ink used could be balanced. Some authorities claim this relationship is pretty close to 1½% of paper used equals ink used as measured in pounds. This rule doesn't seem to work out in actual practice. To see how variable are the results, just scan any of the available records.

When the factors are known, it is easy to understand why ink consumption varies from plant to plant. Among these factors are variation in column lengths, decided variation in paper finish and absorbent qualities, a decided difference in makeup although the average makeup will be balanced from one paper to another. And then there is Old Man Human Element—one pressman lays on the ink rather thickly and another likes it to print gray. Perhaps this is the reason we have foremen!

Very truly yours,
Walter Ogden, *Pressroom Supt.*,
The Cleveland *Press*

Chicago Manager Homer E. Dunn of Linotype Parts Co., stopped off in Cleveland recently on a return trip from attending the annual meeting of company representatives in Weatherly, Pa., during the first part of February. He is covering the northern Ohio area for Charles Lawrence, who is now a radio technician in the armed services. Mr. Dunn reports that the Linotype Parts Co.'s factory is operating on two 55 hr. shift basis, 70% of the total factory output being war work.

. . . to further conserve
the materials of war
EDES V-KOTE
★ A permanent acid-resist plastic resin back coating. Replaces Krombak and thereby releases vital chromium to the needs of war.
★ Saves man-hours and materials by eliminating asphalting, shellacking and other preparatory work.
★ When applying V-Kote Edes pre-heats the metal, thus reducing the stretch and assuring better color register.
★ Adds only 1/1000" thickness to the metal, but adds considerably to the rigidity of the zinc. Especially desirable in the thinner gauges.
★ V-Kote will spot the gauge by color after March 15 — help you to select correct blocking quickly. Supplied only on order, on our Regular and Hard Zinc and on Triplemetal — in three gauges:
.032" with White back .049" with Red back .064" with Blue back
★ To help the war effort and yourself, specify V-Kote. For gauge accuracy and complete freedom from surface blemishes, always specify Edes Roto-Grip.
EDES ENGRAVING METALS

THE EDES MANUFACTURING COMPANY
PLYMOUTH, MASSACHUSETTS
Authorized Representatives

CHICAGO: Chemco Photoproducts Co.
NEW ORLEANS: Chemco Photoproducts Co.
ST. LOUIS: Mid-West Photo-Eng. Supply Co.
WASHINGTON, D. C.: E. H. Walker Supply Co.
RICHMOND, VA.: E. H. Walker Supply Co.
BOSTON: Allan B. Croke Co.
BUFFALO: C. S. Illingworth
DETROIT: Eaton-Clark Co.
CINCINNATI: G. C. Dom Supply Co.
AKRON: Metzger Photo Supply Co.
SAN FRANCISCO: J. W. Feinstein
ATLANTA: Chemco Photoproducts Co.
DENVER, MINNEAPOLIS, TULSA, WICHITA, MEMPHIS, DALLAS, OMAHA, KANSAS CITY, OKLAHOMA CITY, DES MOINES, HOUSTON, SAN ANTONIO } Thompson-Hayward Chemical Co.

EMPLOYMENT
AND SERVICE

Employers, production and mechanical executives may insert notices in this department. Items may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted," readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing Equipment Engineer*, 1276 West Third St., Cleveland, O.

FOREMAN—Who also is linotype operator-machinist and printer, wants position. Twenty years' experience; 14 years in present job of foreman; good producer; wants position with future. Reply Box 101.

Mr. Mechanical Executive—You are just as much interested as is your management in the continued flow of work into your plant. You are interested in promoting the war effort through printing because a big bulk of printing is essential to that effort.

The Graphic Arts Victory Committee is now a going organization and can help your plant essentialize its printing. The Committee was formed solely to assist the industry in this respect. Talk to the Old Man about it. Suggest that he write for full information to Chairman Henry Hoke, Graphic Arts Victory Committee, National City Bank Bldg., Madison at 42nd St., New York, N. Y.

Initiates House Organ

Published in 8½ in. by 11 in. size, and consisting of 6 pages, *The Baird-Ward Reporter* is now being published by and for employees of Baird-Ward Printing Company, Nashville, Tenn. The editorial salute published in issue No. 1 (November 1942) imparts the information that the *Reporter* is to be published essentially for B.-W. employees who are now in the armed services. The back page of the January issue shows there are now 29 employees in the services, including Betty Jo Vinson, daughter of General Superintendent W. E. Vinson, who is now identified with the Waves at Cedar Falls, Iowa. Editorial content of each issue is extremely readable, consisting entirely of news items about B.-W. personnel with illustrations.

Seven employees of *The Oil and Gas Journal*, published at Tulsa, Oklahoma, each having a service record of 20 years or longer were honored December 31, 1942 at a company luncheon at the Tulsa Club. E. Klappenbach, vice president; C. O. Willson, editor; J. J. Courtney and Robins Johantgen, pressmen; Robert C. Porch, printer; James McIntyre, retired associate editor; all of Tulsa, and L. P. Stockman, California district editor, Los

(*Continued on Page 39*)

EXECUTIVE ¶s

Robert Hengehold, representative of the E. J. Kelly Company, ink makers, is the latest member of this firm to enter the United States Army and is now stationed at Camp Beale, Calif. Before

Robert Hengehold is ninth member of E. J. Kelly Co. to enter armed services.

entering the service, he represented the company in West Virginia, Kentucky and Ohio. Hengehold brings the number of Kelly employees in the services up to nine. Others serving their country are S 1–C Elvin Alexander, navy; 1st Sgt. Victor Grassmick, army; Pvt. Richard Webber, army; Pvt. Peter Witek, army; Sgt. Richard Hollingsworth, army; and Sgt. Edward Mentor, army. John Veach and Joseph Kohlenstein are awaiting call as air cadets in the army.

SCREWY – BUT TRUE!

Ink Ingredients! 1000 years ago, Chinese made ink consisting partially of stag-horn glue and albumen from egg-whites! Wonder how they beat offset!

The Older the Better! Black printing inks improve with age. That's why bases of Wotta Blacks are aged at least six months before use!

Beware too Much Drier! Addition of over 15% drier to an ink generally results in poor printability, rapid drying on press, no fas'er drying on stock. Select ink wisely, instead.

Any Color so it's Black! Kelly Co. has formulas for making up 3,724 different black printing inks. That's a lot of kinds of black!

Wotta Blacks ARE GUARANTEED!

GET RID OF OFFSET GRIEF!

Wotta Blacks eliminate offset under almost all conditions. Pile up lifts . . . forget spray . . . skip the slip sheets . . . and you'll still get amazing results. Doubt it? Then cut the coupon! Think it's screwy? Cut it anyway, we'll prove it on our dough!

CLIP AND MAIL THIS COUPON TODAY!

FREE! Here's a valuable book you'll want — "10 Ways to Avoid Offset." Helpful hints for the pressman. Write for it on your firm letterhead — no obligation.

125

E. J. KELLY CO.
1912 N. Pitcher St., Kalamazoo, Mich. 2-43
O.K. Give us the dope on your FREE TRIAL OFFER on WOTTA BLACKS.
Name .....
Firm .....
Address .....

E. J. Kelly Co. KALAMAZOO, MICHIGAN

Miehle Announces Wartime Printing Library

MIEHLE Printing Press & Manufacturing Company has announced completion of a 12 volume, War time Printing Library for printers and lithographers. The project supports the program of the Graphic Arts Victory Committee. Composed of twelve portfolios, the Library has been compiled to help printers and lithographers develop the various types of printing required by national advertisers to implement and promote the war effort. Each portfolio is devoted to some phase of the war effort or the economic stabilization program currently being sponsored by the government.

Volumes I, II, III and IV cover The War Production Drive, describing what it is, its objectives, organization and operations, and the place printed advertising is playing and will continue to play in promoting it.

Volumes V and VI describe the Conservation Drive and the types of printed advertising required in connection with it. Volume VII covers the Salvage Drive, Volume VIII, War Bonds and Stamps, Volumes IX and X, the National Nutrition Program, Volume XI, Civilian Defense, and Volume XII, Morale.

Each portfolio follows a fairly standard pattern by including discussions on (1) Nature of the problem under discussion; (2) Government's objectives; (3) Suggestions telling how printed advertising can help meet the problem; (4) Where to go for more complete information, whom to see, etc.; (5) Layout, copy and design suggestions for the type of printed advertising; (6) Suggestions to guide the printer in making up his presentation, and (7) Specimens of printed advertising collected from every part of the country to show the printer what is being done, what advertisers are thinking about, how good or how poor a job printed advertising is doing and what still remains to be accomplished.

All twelve volumes of the Miehle Wartime Printing Library are available for inspection and study by printers and lithographers. Due to the tremendous amount of labor involved in preparing the portfolios and in collecting the specimen material it has been impossible to produce more than a limited number of sets, but Miehle is offering the facilities of its five branch offices as reading and study rooms. Printers and lithographers are invited to stop in at any time.

A complete set of the twelve volumes is available at the following Miehle branch offices:

R. J. Waite
140 Federal Street, Boston, Mass.

E. J. O'Hayer
330 West 42nd St., New York, N. Y.

C. A. Mills
1015 Chestnut St., Philadelphia, Pa.

H. Iverson
582 Howard St., San Francisco, Calif.

C. R. Endicott
122 Maple Ave., Los Angeles, Calif.

This Wartime Printing Library has been assembled into 12 portfolio style volumes by Miehle Printing Press & Mfg. Co. to help printers and lithographers develop the various types of printing required by national advertisers to assist the war effort. The program of the Graphic Arts Victory Committee is supported by this project, *i.e.*, it promoted essential printing.

GETS ARMY-NAVY "E"

THE Morley Company, Portsmouth, N. H., has received the coveted Army-Navy "E". The presentation ceremonies took place at the Morley plant in Portsmouth on February 5.

In addition to its regular production, The Morley Company has been producing war goods for more than a year. These war-time items have included parts for gas masks, decontaminators, bags for the Army Chemical Warfare Service, machining and plastic molding for the Portsmouth Navy Yard. The Morley Company has subcontracted for many fiber and plastic buttons used on uniforms and clothing for the armed forces. Other products currently manufactured are necessary to such vital civilian industries as newspaper publishing and the making of work clothes.

"On several occasions," states President Eugene B. Whittemore, "Morley has received emergency war orders for equipment needed in a great hurry and has taken extraordinary measures to fill these orders speedily."

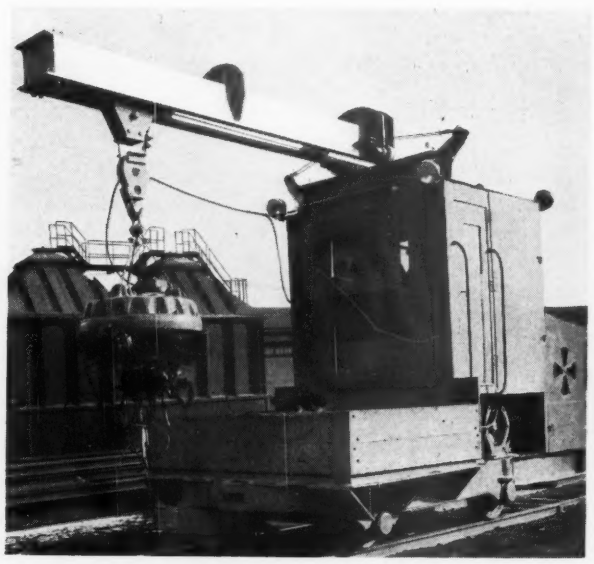
Work of Six Men

A self-powered magnetic scrap picker, designed and constructed by The Timken Roller Bearing Company from odds and ends, was placed in operation recently and is doing the work of six men gathering up scrap in the company's railroad yards. In 2 hours time, it does the work that three 2-men crews formerly did in 24 hours.

Mounted on an ingot buggy, it is powered by a Hercules, Ford V-8 diesel replacement engine that drives a 230 v. d.c. generator. The generator supplies power for the magnet and the electric motor drive.

The magnet is 39 in. diam. and can lift 900 lbs. of heavy scrap, or 300 lbs. of turnings per load. The box on the front of the picker holds about 1200 lbs. of scrap.

The boom has a 12 ft. swing.



This magnet will lift 900 lbs. heavy scrap, or 300 lbs. of turnings. Built by Timken from odds and ends.

"Huh, for perfect uniformity give me the results we get from our **WOOD MATS.**"

WOOD FLONG CORPORATION
HOOSICK FALLS, NEW YORK
NEW YORK CITY OFFICE: 551 FIFTH AVENUE

EXECUTIVE ¶s

(Continued from Page 37)

Angeles, were the seven honored. President P. C. Lauinger presented each of the 20-year men with emblems in the form of tie clasps and pendants symbolic of their service records.

The many friends of Lieutenant Charles H. Stout, United States Naval Reserve, will be interested to know that he and Katherine Elizabeth Black, daughter of Mrs. George William Black, were married at Miami, Fla., on Wednesday, December 30, 1942. Lieutenant Stout is stationed at Miami.

USNR Lieut. C. H. Stout marries in Miami, Fla.

After serving The Union-Tribune Publishing Co., San Diego, Calif., as stereotype superintendent for 27 years, William T. Schneider retired from active duty during the early part of January.

When Wm. T. Schneider retired as Stereo Supt. of San Diego (Calif.) *Tribune - Sun - Union,* the *Union* headed up article in paper as follows: "Hangs Up Gloves."

Mr. Schneider has been actively in the trade for 57 years. He is 74 years of age. Six men worked in the stereotype department when he first took charge—today there are 22 men employed in the department. Along with other executives and employees of the San Diego newspapers, Mr. Schneider participated in the recent quick expansion of plant production brought about by sudden growth of the community in which the San Diego papers circulate. He came to California in 1912 from the Columbus (O.) *Press-Post*. Production Manager Ken Gregg has announced the appointment of Harry Lindsay to succeed Mr. Schneider as stereotype superintendent of the San Diego newspapers.

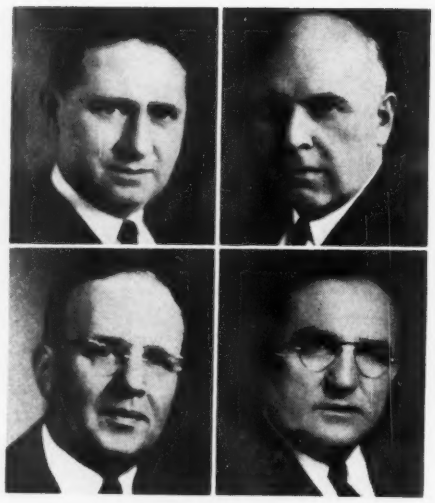
General Printing Ink Corporation announces the appointment of Robert J. Butler as General Manager of the Fuchs & Lang Manufacturing Company Div. Mr. Butler succeeds John F. Devine, who was recently advanced to Operating Vice President of General Printing Ink Corporation. Mr. Butler has been associated with the Fuchs & Lang Manufacturing Co. for a number of years and has served in various capacities, including Technical Service Manager and General Sales Manager. He has long been active in lithographic circles, having acted as chairman, advisor and lecturer at numerous technical meetings throughout the country.

In Philadelphia, on January 2, occurred the death of Edward C. Eschinger. He was 67 years of age and had been an employee of the Lanston Monotype Machine Company for 56 years. The cause of death was a paralytic stroke. Mr. Essinger was an expert mechanic and had served the company in a number of supervisory capacities before being placed in charge of experimental de-

partment mechanical work about 20 years ago. His first connection with Monotype was in Washington, D. C., where he was hired in 1896 to help Tolbert Lanston build and develop the Monotype typesetting machine.

Air Corps Lieut. James L. Lee, son of Mr. and Mrs. J. Wesley Lee, Grand Haven, Mich., was reported by the War department on January 12 as having been missing in action in the western Europe area since January 3. Mr. Lee graduated from the Carnegie Institute of Technology in 1940 when he received the B.S. degree in printing. The following year he became associated with the Challenge Machinery Company in Grand Haven, the firm which was established by J. L. Lee, his great-grandfather. His father J. Wesley Lee, is vice president of The Challenge Machinery Company. Mr. Lee received his wings at Valdosta, Ga., on July 3 when he was commissioned a second Lieutenant in the army air corps. His promotion to first lieutenant was made recently. He was born in Grand Haven on September 28, 1917. He married Miss Helen Bloom of Muskegon on July 8. The couple then went to Salt Lake City, where Mrs. Lee remained until he received orders for overseas duty, when she returned to Muskegon. He was 25 years of age.

Mechanical Superintendent James Tolan has announced that Charles Crawford is now head machinist of the Philadelphia *Record* composing room.



These four men, each with a minimum of 25 years' service, were honored recently by International Printing Ink Div. of Interchemical Corporation, at the New York Athletic Club. At upper left: T. A. Ryan, 25 years; (upper right): T. J. Reese, 34 years; (lower left): M. A. Flynn, 42 years, and (lower right): J. W. Power, 25 years.

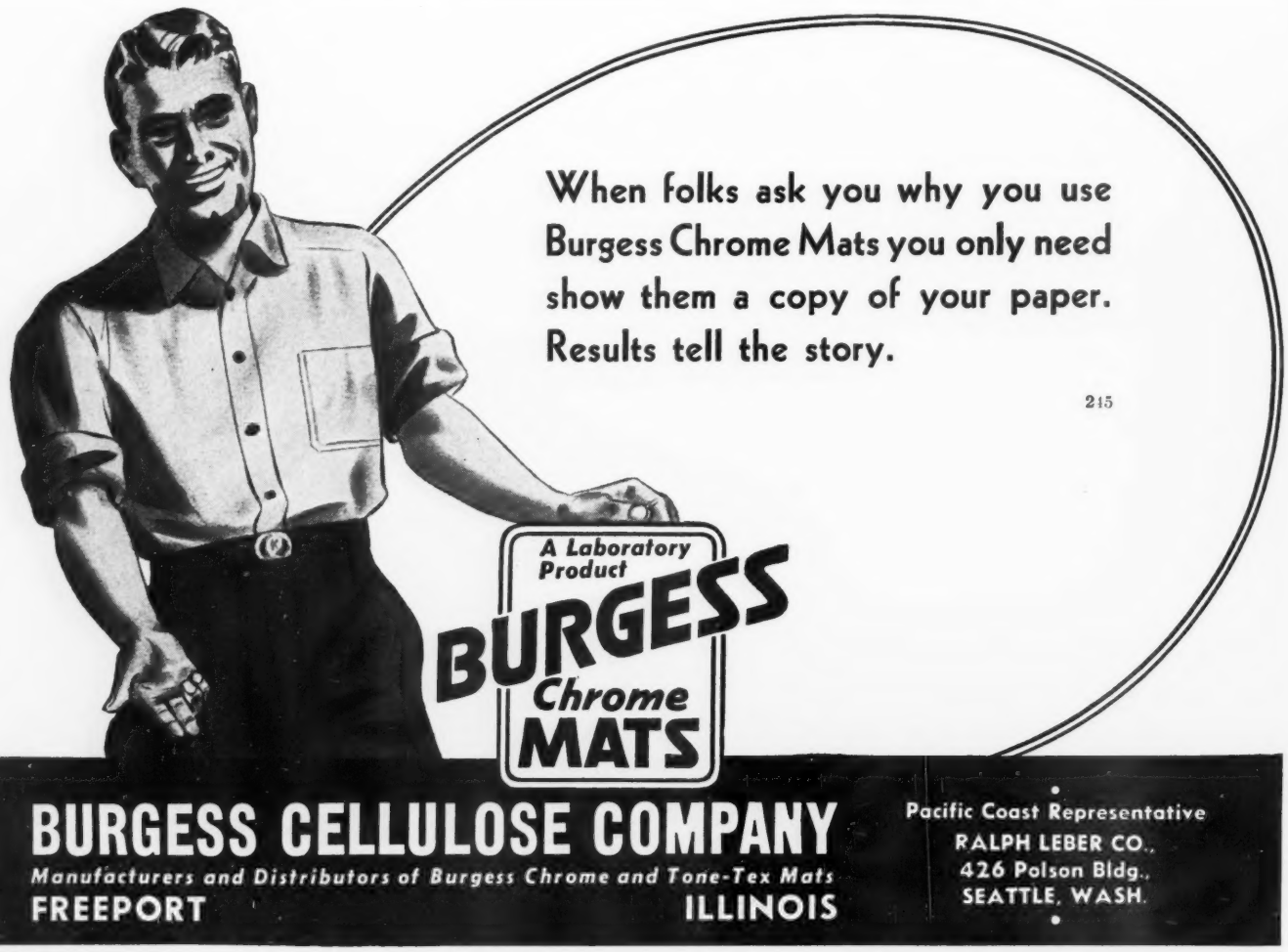
Ipi Honors Quarter-Century Men

Four men who have completed 25 or more years of service with International Printing Ink Div. of Interchemical Corporation, were honored at a dinner at the New York Athletic Club recently. All of the men came to Ipi in 1928 at the time of the consolidation of the ink companies. Mike Flynn had worked for the old Ault & Wiborg Co. of New York since 1900; Tom Reese went with that same company in 1908, and Tim Ryan joined them in 1917. Jack Power had worked for Philip Ruxton, Inc., Cincinnati, since 1907.

Vice President Frank Cray of Ipi acted as master of ceremonies at the dinner which was attended by members of the executive personnel of both Ipi and Interchemical, including Ipi President Bromwell Ault and Ipi Vice President James Beckett, and E. W. Pittman, A. Wallace Chauncey and H. B. Woodman of Interchemical.

Toastmaster Frank Cray presented the four honor guests either with inscribed gold wrist watches or initialed luggage. After making the presentations, he turned the meeting over to Tom Reese who presided during the speaking program.

Col. J. W. Viner has been elected vice president of the International Printing Ink Division of Interchemical Corporation. As sales manager he assumes responsibility for the sale of all specialty products. In addition to aniline inks, the department now promotes the sale of products which have a direct bearing on war production, including laminants, adhesives, and sealing compounds for packages used by the armed services, flame-proofing and camouflage compounds for paper and fabrics, and other special types of coatings. Headquarters for this department are at the New York branch office of IPI, 636 Eleventh Avenue, New York.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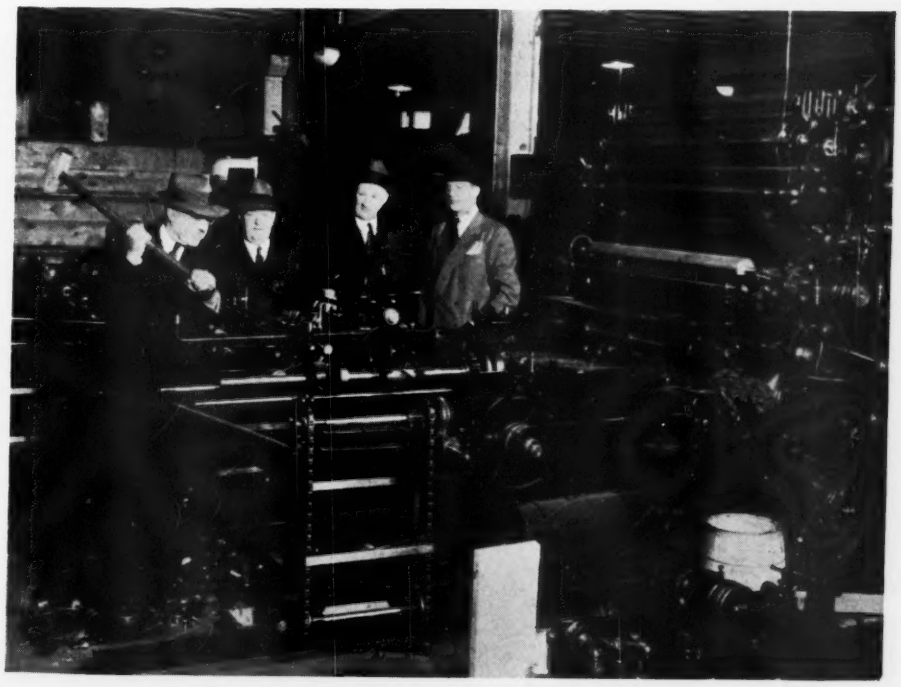

Contributes To Nation's Scrap Supply—About 50 tons of metal were contributed to the nation's scrap supply recently by the Harris-Seybold-Potter Company. A number of obsolete printing presses that had been held in storage in Chicago were sent on their way to help along with the war effort. Scrapping operations were carried out under the direction of J. L. Bluemer, district service manager of the Harris Chicago office. In the picture (left to right): Holding the setting maul aloft is Vice President Harry Porter who initiated cracking up operations; Mr. Bluemer; Vice President William Guy Martin of the Chicago Harris office, and Field Representative J. G. Sheldon, of the Chicago office, WPB's Industrial Salvage Branch.

Mr. Mechanical Executive:

COOPERATE with the company from whom you buy operating supplies and machine replacement parts, by returning to the manufacturer or distributor within 30 days the replaced parts of similar size and kind in accordance with the provisions of Machinery Order L-226. Alternative method is to certify to the manufacturer or distributor concurrently with purchase order that you will dispose of such parts through scrap channels within 30 days of receipt of the new parts. In this way, needless delays in securing operating supplies and replacement parts in your next order will be obviated. If you haven't returned old parts in exchange for the new ones, the manufacturer will be placed in the "hot seat".

SECOND ELEVATOR TRANSFER

Adjustments on Linotypes not fitted with intermediate channel front plate extension

By ALBERT B. KRANZ*

*Machinist, Border Publishing Company, International Falls, Minn.

THE following analysis of troubles associated with Linotype second elevator transfer operations is predicated on the writer's belief that it may prove of genuine help in composing rooms where applied remedial measures have been unsatisfactory or where attempts at remedy have given rise to new difficulties. This discussion is intended particularly for composing machines not fitted with intermediate channel front plate extension (D-3147).

In these machines, most problems arise with respect to related adjustment of the intermediate transfer channel, first elevator slide guide, and the second elevator bar and link. Failure to take into account the relationships of the first elevator jaws, transfer finger and transfer lever in this discussion must not be construed as detracting from their importance to a well adjusted machine but rather because sufficient good counsel already has been made available.

Generally, the following will prove helpful in adjusting those machines in which lubrication and maintenance have been neglected over a long period of time and where maladjustment has been resorted to in an attempt to meet a troublesome transfer problem.

The nature and character of various troubles may be classified as follows:

I.—Transfer of matrices from the first elevator jaws to the second elevator bar which is smooth on occasion and suddenly varies to fair or rasping transfer. Indicated causes and remedies are as follows:

(*a*) Bad condition of wear in second elevator bar link (G-169). Bush the holes for the hinge pin rod and renew the bar.

(*b*) Similar condition of wear in second elevator bar link hinge pin rod (G-137). The only remedy lies in renewal of the rod together with repaired or renewed link as described in (*a*) above.

(*c*) Undue wear of the second elevator guide, lower (D-1587) at the surface which is engaged by the second elevator bar plate as the plate is about to be seated on the intermediate channel, and of the second elevator bar plate (G-1371) slot which is worn from use to such an extent that it permits side play in seating of second elevator. The latter is less responsible for a varying transfer condition, but weekly application of oil with the finger-tip to the lower guide is advised.

(*d*) Excessive play (forward and back) in the first elevator head while in transfer position. The condition here should be snug, but not binding. Adjust by two forward cap screws (vertical) extending through the guide into the elevator slide guide adjusting strip (D-582). Keep even the tension at either end of the adjusting strip and adjust the strip until the duplex rail is retracted fully so as to let a line of matrices in auxiliary position drop freely when the first elevator is at transfer position.

(*e*) Poor tension or overstretched second elevator adjusting spring.

II.—Tendency of matrices to "climb" in the first elevator jaws when recasting lines or tendency of matrices or spacebands to bind against the back

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MANUAL *of* STEREOTYPING

by JOSEPH D. GOGGIN

In this book, the author discusses the three primary factors in stereotyping — equipment, materials and manipulation. Since the stereotyping process largely is an Art and the results to be obtained in good plate-making are dependent upon the coordination of equipment, materials and manipulation, a reliable guide for securing this coordination is essential.

In preparing this book, the author has drawn upon his extensive practical experience and study in the Art. The all-important preparation of the form from which the mold is to be made and the molding and casting procedures are thoroughly discussed from the standpoint of the peculiar requirements of the process.

A Glossary and Encyclopedia gives definitions of terms used in the stereotype process. Bound in black cloth, gold stamped, 256 pages, size 5½ in. by 8 in. Price, $5, cash with order. Handling margin makes it necessary that cash accompany all orders for books.

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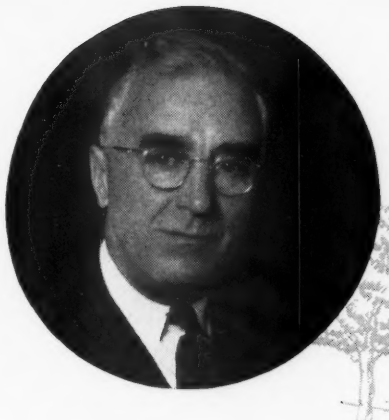

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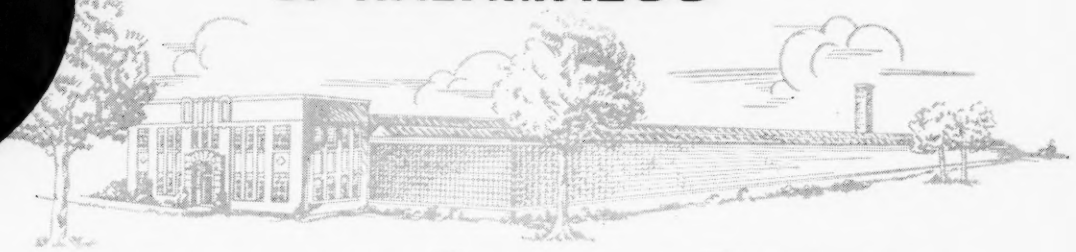

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surface of the intermediate transfer channel when otherwise smooth transfer to second elevator bar has been attained. Indicated trouble and remedy for this difficult condition implies the following:

(*a*) Faulty lubrication and consequent wear of the intermediate bar (D-2333) and vise cap facing (E-487).

An initial step would be to look for possible shims between the intermediate bar and the slide guide. Remove them. If the intermediate bar is worn badly, renew it. Dressing the upper part of bar to compensate for lower surface wear is not good practice.

A worn vise cap facing properly is not an elevator transfer problem, but some time in the past it may have contributed to tampering with slide guide position, or, to excessive wear of the intermediate bar. Properly lubricated, the vise cap facing should last for many years.

(*b*) *Improperly positioned first elevator slide guide* (D-2262). The foregoing sentence is italicized because it should serve to emphasize that the slide guide setting should not be disturbed unless its original setting has not been maintained, either by reason of ill-advised tampering or, having lost its position because of loosened fastening screws. The foregoing malpractice with respect to the slide guide may be more widespread than generally is believed. Most any kind of malpractice is possible—the writer has even found shims behind the faceplate on one line-casting machine. Best guess is that it was resorted to because of an improperly positioned slide guide. In any event, such measures are signals of distress and are utterly unjustifiable.

Now, let us consider steps for positioning the slide guide properly. (1) Loosen the three hex. hd. cap screws (vertical) at rear of slide guide. Next, see that the intermediate bar is positioned laterally so that the two holding screws are posi tioned centrally in the holes through which the screws pass in the guide casting. Note that the guide may now be moved forward and back or to either side. (2) Back off the headless adjusting screws (8x32—horizontally positioned) at back of slide guide. Now set these two adjusting screws so that the intermediate bar pawl (D-150) will be exactly 12/32 in. from the inside edge of the intermediate channel back plate. This adjustment centers the intermediate bar with transfer channel. Be careful to set both adjusting screws evenly so that the intermediate bar will be parallel to the first elevator front jaw. Now move the slide guide to the right until the intermediate bar is within 10/32 in. (about 20 points) of the vertical side of the intermediate channel. Then, as you hold the slide guide toward the front of machine, proceed to tighten the three cap screws that hold the slide guide in position on the face plate.

Exercise patience and exactness in the foregoing operations and you will find the trouble set forth in (II) of this outline corrected effectively. As a final check, it will be well to bring the machine to transfer position and then check to see that there is about 1 pt. clearance between the second elevator bar and the intermediate bar. Be sure there is no bind here, in which case the slide guide intermediate bar may be moved slightly to the left. From this point forward you may secure a transfer condition that is smooth and one that can be maintained by following the steps outlined in any machinist's handbook.

On machines not having the intermediate channel front plate extension, it is advisable to shun the expediency of punch marks on the second elevator bar plate (G-1371) to facilitate positioning of the second elevator bar in seating. It is better to shim or dress the second elevator guide post on the surface where the stud holds it against the intermediate channel front plate. Be careful to stone or file it evenly, however, and thereby insure full surface contact between the second elevator bar plate match with guide post. Uneven contact here may cause the second elevator bar to seat at a slight angle, or to wear down with abnormal rapidity.

Investigational Work By Regional Groups Benefits All Printers in Country

IT may be true that research or investigational work operates most effectively in times of stress—or should we say that those sponsoring such programs take advantage of the benefits to be derived from research and investigational work only during the times when our economy has been precipitated into an abnormal state? Research brought fine technological improvements to the printing industries as the result of the intensive work done by equipment manufacturers in the depressed early 30s. It is not fair to state that group research or investigational work is exactly quiescent in fairly normal times. We do feel, however, that recognition of the potency of research as an effective industrial weapon is accelerated in abnormal times. This is true particularly when the existence of any segment of an industry is threatened.

As the result of a collective investigational program by a well known midwestern Graphic Arts organization, we hope some degree of permanency will be established after the war has been finished. It is entirely possible that the program can be expanded from its regional scope into one of national coverage because of its demonstrated value.

The first bulletin entitled *War Product Research Report* to have been published by the Graphic Arts Association of Illinois, Inc., was reviewed briefly in the January issue of *Printing Equipment Engineer*. Under date of December 28, 1942, the Association published its second bulletin, *The Critical Temperature for the Proper Operation of the Pressrooms of Commercial Printing Plants*.

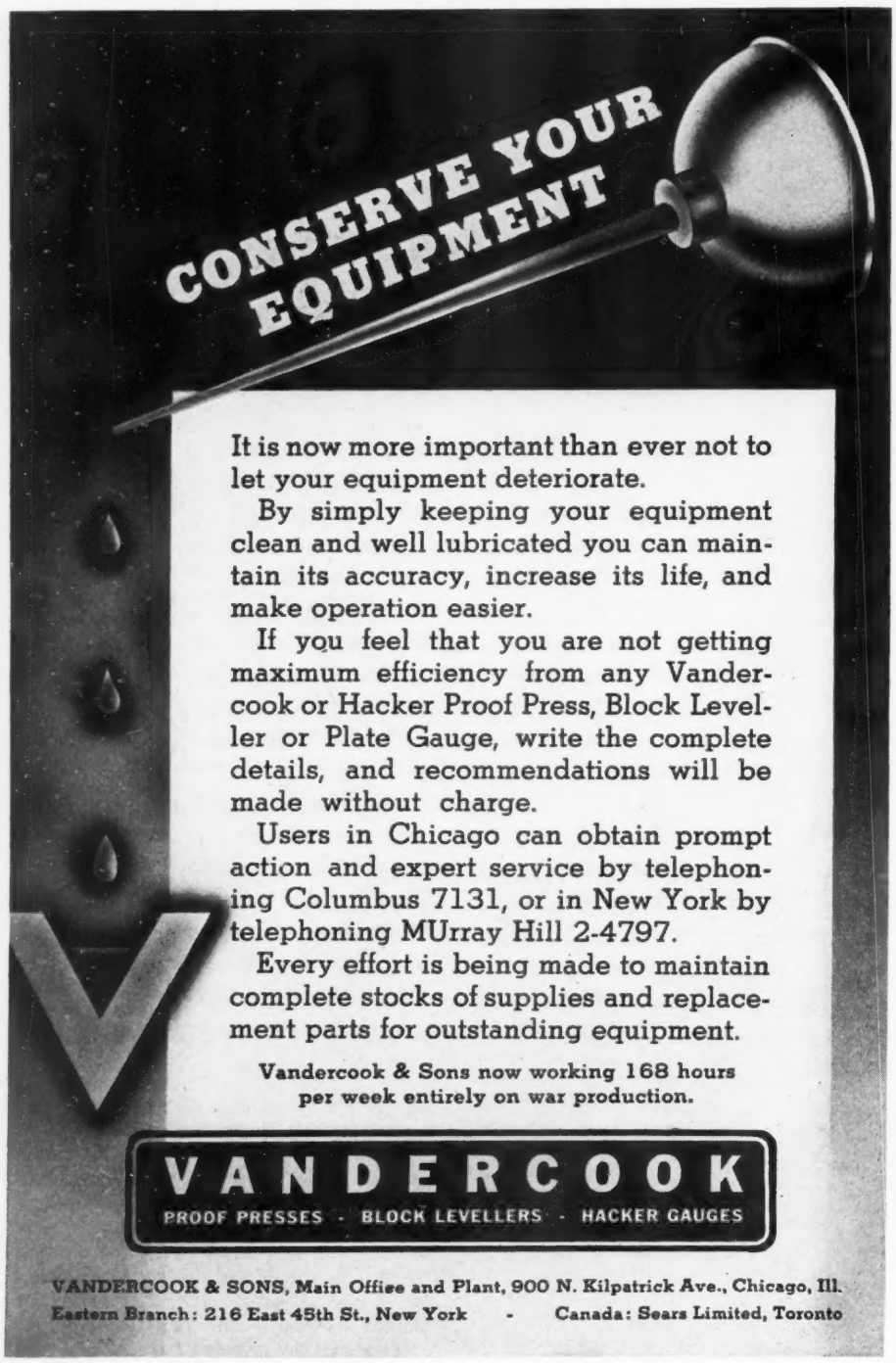
This bulletin was prepared by the association's committee under the direction of Products Engineer M. E. Powers. The content of the bulletin is an exposition showing the necessity for continuous maintenance of the proper temperature in the pressroom. The technical discussion shows the difficulty of maintaining peak production when pressroom temperatures are sub-normal in relation to ink, paper and the machinery itself.

In the bulletin, it is stated that member-printers of the Graphic Arts Association literally have shipped trainloads of Government printed matter in compliance with demands for quick delivery. Production required is such that the printing plants must operate Sundays and holidays. As the result of rationed fuel used in these plants printers are forced to operate at lowered temperatures, which directly retards the war effort because top production cannot be maintained. Through publication of the bulletin, it is hoped that the War Price and Rationing Boards of OPA will give consideration to the facts presented in the bulletin when printing establishments apply for sufficient fuel to keep their plants at the necessary temperature of 75 deg.

Besides the introductory discussion by Mr. Powers, supporting letters from well known Graphic Arts executives are reproduced. Among these are President Martin Driscoll of the Chicago Printing Ink Makers Association; President Albert B. Tucker of the Fine Paper Association of Chicago; Director Carl G. Bingham of the National Association of Printers' Roller Manufacturers; L. F. Ross of Parks-Cramer Co.; B. Offen of B. Offen & Co., and President Walter Leggett of the Chicago Lithographers Club. Other quotations used in the bulletin are from H. S. Public Printer A. E. Giegengack and Bayard P. Fonda of the A.S.E.

It may be argued by some who are not so well informed that the content of the bulletin is mostly a matter of personal opinion. The facts related to temperature and relative humidity have been established for some time. These facts have been available to the printing industry and most printing plant executives are familiar with the phenomena of temperature and humidity conditions, particularly in the pressroom. Aside from this, the reputations of the men contributing to the bulletin are well established and their discussions are in line with authoritative facts. In the instance of this bulletin a group of Graphic Arts executives have taken advantage of the potency of collective technical information to attempt to correct an impossible condition.

Not only has the Graphic Arts Association of Illinois performed a service for its members in publishing the bulletin, but we feel that it also has performed a distinct service for the entire industry all over the country in the present emergency inasmuch as all pressrooms are operated under conditions parallel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to those of the Association's member plants.

A few brief extracts from the bulletin will serve to refresh the minds of printing executives who have not encountered sub-normal pressroom temperatures recently. States Production Engineer M. E. Powers: "The cold pressrooms of Monday morning and during severe winter weather have proved conclusively that the temperature of the pressroom cannot be lowered below the standard 75 deg. without immediate handicap to the printer. Experience also shows there is no substitute for heat. Heat permits the increase and regulation of humidity and the proper control of the relation between temperature and humidity is the fundamental basis for good printing plant operation."

"The effects of low temperatures and humidities in a pressroom," writes Hon. A. E. Giegengack, "are causes of all sorts of troubles with inks and rollers and paper curl and static charges which interfere with feeding. In considering the solution of pressroom troubles, temperature cannot be divorced from the moisture carried by the air at the given temperature. The relative humidity is quite as important as temperature control to the proper operation of papers, inks, rollers and presses and the health of the operators."

Consulting Engineer Bayard P. Fonda states: "In the printing process the degree of air conditions, or the temperature and humidity which are to be maintained, apparently is not as important to the result as the constancy of maintaining those conditions once they are set. It is equilibrium which is necessary with any reasonable combination of temperature and humidity. By 'reasonable combination' is meant a working range of perhaps 10 deg. in temperature and 10% in relative humidity. A temperature from 75 deg. to 85 deg. and a relative humidity from 45% to 55% may be chosen, but once some combination has been decided upon, it is essential that the humidity be held at the same point as closely as possible."

In a pressroom which has been permitted to cool down during the night, Albert B. Tucker states: ". . . the temperature of the room can be raised quickly, but it may take several hours to neutralize the temperature of the paper."

With respect to static, Carl G. Bingham writes: "One of the reasons for maintaining these temperatures at the level indicated is the elimination of static electricity which is generated much more rapidly at low temperatures. Another reason is that with falling temperatures of a pressroom the expansion or contraction of the paper being printed is erratic and irregular."

L. F. Ross writes: "There seems to be no question at all but that if a pressroom is maintained at around 50% relative humidity that difficulties from static can be generally forgotten provided the paper is in a condition of equilibrium with this relative humidity."

"We realize many plants are not equipped with humidity devices," states B. Offen. "Nevertheless, by keeping the paper uniformly warm, and with makeshift arrangements of shooting some steam into the air, they are able to get by, but were they obliged to run cold paper through a cold press, they would not be able to run with any production. They would probably lose a half-day before the press really would begin to make deliveries.

"When you continuously change the temperature, with paper in the room, the outer edges are affected. The temperature change penetrates within the pile to about 2 in., while the inner part retains more or less its original temperature. Where you have paper with a difference in temperature between the inner part and outer edges, you will find it almost impossible to run the sheet through the press."

PATENTS

(Continued from Page 27)

to a uniform depth. The roughing-out is accomplished by means of a band saw with a thin blade. Cuts are made in the blank to produce a series of grooves of the shape desired but under the required dimensions. The blank is then milled in the usual manner to form the aligning lip on the front face, after which it is case hardened and ground to final dimensions. Invented by George W. Allison, St. Albans, N. Y. Assigned to Mergenthaler Linotype Co., Brooklyn, N. Y. Application April 19, 1940. 23 claims.

Feeding, Folding, Delivery:

2,308,086. APPARATUS FOR CUTTING PAPER AND CARD STOCK such as in the photographic reproduction of cards. It is of the type disclosed in patent 2,126,478.

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After photographic images have been developed the paper has a tendency to curl longitudinally and difficulty is experienced in feeding the paper smoothly when cutting large cards. The present invention provides for "disappearing" anti-curling deflectors or guides which direct the sheet into proper position with the cutting knife and then moves out of the way during the cutting so as not to interfere with cutting or dropping of sheets after they have been severed. Invented by Paul Landrock, Rochester, N. Y. Assigned to Photostat Corp., Providence, R. I. Application February 16, 1942. 15 claims.

2,308,862. IMPROVEMENTS IN DELIVERY mechanism of rotary printing presses for production of magazines. Invention provides for a pair of folding and cutting cylinders, one of which has sets of arcuate bands of rubber upon its periphery, and the other has corresponding sets of non-resilient bands. The bands can be spaced so that each set fits the web at a margin of the printed matter where it is to be cut. Due to the force exerted by the bands upon the webs, the cylinders will accommodate several webs without wrinkling or disaligning the webs. Invented by Curtis S. Crafts, Oak Park, Ill. Assigned to The Goss Printing Press Co., Chicago, Ill. Application July 24, 1940. 6 claims.

Miscellaneous:

2,306,525. METHOD OF MULTITONE COATING the surface of paper, Cellophane, and the like to produce an ornamented multitone surface by the use of a single coating composition and operation without the need of printing a multiplicity of colors. The principle of "blushing" is used, i.e., a lacquer is applied which has its binder insoluble in its solvent during some portion of the film-forming operation thereby causing the binder to precipitate out in very small transparent particles having air between them and thus, in appearance, only, being white and not transparent. It is now found that when such a "blushed" coating is dried, subsequent treatment with an embossing roller under pressure will squeeze the air out of the film returning it from white and not transparent, to clear and transparent. The film may be colored so that after embossing the color will vary from pastel to much deeper tones of the same color. Invented by John S. Cummings. Brooklyn, N. Y. Assigned to Interchemical Corp., New York, N. Y. Application January 6, 1938. 1 claim.

2,306,451. NEW CELLULOSE DERIVATIVES which are at least partially soluble in caustic alkali solution but insoluble or only slightly soluble in water. They are prepared by treating cellulose simultaneously or consecutively at a raised temperature with an ethylating agent and a hydroxy-alkylating agent, e.g. ethyl chloride and ethylene chlorohydrin in the presence of an amount of caustic alkali smaller than the weight of the water present. Products of the invention are useful as thickening or fixing agents for pigments in textile printing. Invented by Leon Lilienfeld, Vienna, Austria. Assigned by Antonie Lilienfeld, administratrix of Leon Lilienfeld, deceased, to Lilienfeld Patents, Inc., Boston, Mass. Application March 27, 1936. 1 claim.

2,306,681. NEW WATER INSOLUBLE AZO DYESTUFFS, prepared by combining in substance or on a substratum the diazo compounds of amino arylethers of the benzene series with acetoacetylamino-benzothiazole compounds containing in the 6-position of the benzothiazole radical an aryloxy group of the benzene series. The new dyes produce yellow to reddish yellow to greenish yellow shades of good fastness on textiles by the usual dyeing or printing processes. Invented by Werner Zerweck, Josef Riedmair, and Walter Brunner, Frankfort-on-the-Main-Fechenheim, Germany. Assigned to General Aniline & Film Corp., New York, N. Y. Application January 7, 1941. 4 claims.

2,307,097. METHOD OF PRINTING TEXTILE FABRICS with a printing paste containing an insoluble color pigment, which eliminates the developing and washing treatments heretofore necessary. This is accomplished by first preparing a printing paste containing an insoluble color pigment such as Vulcan Fast yellow 5 G and the like, dispersed in a carrier vehicle comprising a water-in-oil

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emulsion of a water insoluble cellulose ether such as ethyl cellulose. The emulsion may be prepared by stirring water and a suitable solvent into a water-immiscible solvent solution of the ether containing the pigment in dispersed form, and then homogenizing the resulting emulsion in a suitable colloid mill. The printing paste is then applied to the fabric by means of printing rollers or screens fcllowed by drying of the fabric at a temperature of 220-300° F. No further treatment is necessary since the pigment is in its developed state. Invented by Louis E. Anderson, Jr., Wilmington, Del. Assigned to Hercules Powder Co., Wilmington, Del. Application February 10, 1940. 6 claims.

2,307,118. METHOD OF PRODUCING EFFECTS on cellulosic textile material, i.e., fibers of natural or regenerated cellulose without dry heating or mechanically treating the tissue. This is accomplished by locally treating the tissue on which the design or effect is to be produced with organic sulfonic acids and then steaming. Example: A mixed tissue of viscose rayon and acetate silk is printed with a printing paste of the fcllowing composition: Naphthalene-2-sulfonic acid—80 grams; water—420 grams; starch-tragacanth-thickening—500 grams. The material is dried, steamed for five minutes and washed as usual. At the printed areas the cellulose fibers have been acted upon. Invented by Ernst Doring and Hans Grassmader, Wuppertal-Elberfeld, Germany. Assigned by mesne assignments to General Aniline & Film Corp., New York, N. Y. Application August 16, 1939. 5 claims.

2,308,711. METHOD OF CONDITIONING ANTHRAQUINONE VAT DYESTUFFS to form pigments having high tinting strength, improved mass tone, clarity of hue and softness of particle, thus enabling these pigments to be employed in inks, lacquers, enamels, etc. This is accomplished by mixing a dyestuff such as crude Indanthrene Blue RS with a liquid aromatic amine having an aniline nucleus, e.g. aniline, and then removing the amine from the mixture, whereby a desirable pigment form is obtained. Invented by Grady M. O'Neal, Chicago, Ill. Assigned to The Sherwin-Williams Co., Cleveland, Ohio. Application April 16, 1941. 19 claims.

2,308,763. TEXTILE PRINTING PASTE of the type prepared with the use of emulsions of water-insoluble film-forming binders, wherein the penetrating power of the paste is improved by including a small amount of a terpene ether therein as a penetrating agent. Example: A water-in-oil type emulsion was prepared using a urea-formaldehyde resin as the film forming ingredient and comprising 30 parts (by weight) of the resin, 38 parts Solvesso No. 2 and 32 parts water. Using the above emulsion, a paste was prepared according to the following formulation: Urea-formaldehyde emulsion—10 parts (by weight); terpinyl glycol ether—15 parts; aridye Green LJ3B—20 parts; water—55 parts. Fabrics printed with such pastes are very thoroughly and evenly printed with the coloring component. Invented by Bunyan H. Little, Wilmington, Del. Assigned to Hercules Powder Co., Wilmington, Del. Application June 14, 1941. 13 claims.

Plate Making:

2,306,869. ETCHED SCREEN of the half-tone-glass crossline type where two single ruled glass plates are sealed together or one plate is cross-ruled and then optically sealed with an unruled plate. Or, for intaglio work, the crosslines may be kept transparent and raised, with the square intervals etched and opaqued. A feature of the present invention is the mirroring of the deep etched lines or dots, as the case may be, with a solution of lead-acetate or silver nitrate and thereafter filling in the mirrored indentations with the usual opaque pigment. The resulting mirror foil on the ground of the etched lines or dots serves to reflect and thereby stop the radiated heat of the light source. By thus stopping radiated heat from penetrating all but the transparent pattern of the screen, the sensitized pigment paper known as "carbon tissue" is kept proportionately cooler as known to be desirable in overcoming dimness attributed to heat. Invented by Hermann Eckerlin, Frankfort-on-the-Main, Germany. Vested in the Alien Property Custodian. Application October 3, 1941. 4 claims.

2,306,936. PROCESS OF FLASHING IN THE HALFTONE in a photograph for subsequent use in plate making. Instead of white light, a monochromatic light is selected preferably with short wave length such as blue light. This one monochromatic light is used not only for one-color neutral printing but also in color printing requiring more than one color plate. In the latter case a suitable color filter is inserted in the camera to filter out colors that are to be printed by the plate in question. By the use of a single monochromatic light the screen may be placed for best focus of this one light. Further, especially with short wave monochromatic light, there is less diffraction beyond the halftone screen openings. For these reasons dots produced by flashing through a given screen are of smaller size, more intense, and hence have greater ability to produce shadow and highlight detail. Invented by Carl C. Chambers, Lansdowne, Pa. Assigned to Edward Stern & Co., Inc., Philadelphia, Pa. Application March 26, 1940. 12 claims.

2,307,479. SHUTTER CONTROL FOR HIGH SPEED PRECISION CAMERAS. A feature of the invention is that the various control and indicating mechanisms are grouped in the dark room for convenient operation and observation by the operator. The focusing operation,

change of diaphragm opening, control of light path by the shutter and illumination of the lamps are all effected by the operator while he is in the dark room at the back of the camera. It is not necessary to leave the dark room for ordinary operation. Invented by Michael Annick, Rutherford, N. J. Assigned to General Printing Ink Corp., New York, N. Y. Original application November 25, 1938, now patent 2,261,205. Divided and this application March 27, 1941. 4 claims.

2,308,900. BEN DAY SHEET OR FILM by the use of which screened effects are produced for printing processes without benefit of vacuum frames. The shading film comprises a transparent element preferably of highly parchmentized paper, or a thin strong sheet of "Cellophane." Shading elements are placed on the sheet by applying a sizing solution to the upper surface and thereafter a pigment of suitable composition is "pounded" or "flocked" on the still sticky sizing. A thin layer of non-drying transparent adhesive is applied to the under side of the sheet and then attached to a protective sheet of "Glassine". When the shading film is to be used the "Glassine" is peeled off in the usual manner and the film is pressed into adhesive contact with the picture. The shading pigment can be readily removed with a tool such as a wood stylus so that shading can be removed from any portions which should appear in the finished photoengraving without shading. Invented by Russell Tryon, Montclair, N. J., and Walter B. Hirsh, Cedarhurst, N. Y. Assigned to Transograph Corp., Corporation of New York. Application March 23, 1939. 3 claims.

2,309,027. METHOD OF MAKING A PLANOGRAPHIC PRINTING PLATE which uses a lithographic base made of waterproofed paper or the like having a surface layer of polyvinyl alcohol. To this base is applied a smooth uniform coating of a light-sensitive emulsion such as a suspension of albumin and ammonium bichromate in water. The coating is then covered with a layer of greasy developing material such as linseed oil and a blue pigment which is translucent to actinic light. The plate is next exposed to actinic light passed through a photographic negative in contact with the greasy developing material and thereafter the unexposed portions of the emulsion and adjacent developing material are removed by treatment with a mixture of water and gum arabic. Invention eliminates the need for whirling plates, effects savings in light-sensitive materials, avoids the use of running water in washing plates and thereby makes possible the use of paper plates instead of metal ones. Invented by William C. Toland and Ellis Bassist, Brookline, Mass. Assigned to William C. Toland, trustee. Application November 12, 1941. 7 claims.

2,309,048. COLOR CORRECTING METHOD AND DEVICE for the toning of separation negatives used in color reproduction. It obviates the time-consuming trial-and-error system of masking. Instead, the present invention makes a fully corrected negative in one operation without guesswork. Two narrow beams of light are used, one a pilot beam and the other an exposure beam, both focused on (and passing through) the same spot and moved about from place to place so that the spot covers the entire transparency. The beams are made separable by polarizing one vertically and the other horizontally and placing selecting screens over their respective destinations. The pilot beam emanating from the spot passes through a color selecting means and thence to a light-sensitive means which is used to control the intensity of the exposing beam simultaneously passing through the spot. Thus the separation negative being made is exposed in a corresponding small spot according to the adjusted characteristics of the light received from the particular spot on the transparency. Invented by Paul Curry, Kalamazoo, Mich. Unassigned. Application March 13, 1941. 14 claims.

Printing Presses and Equipment:

2,306,607. WEB DRYING METHOD AND DEVICE intended for drying webs or sheets of freshly printed paper especially in connection with an intaglio printing machine. Principal object is to provide means for drying the printed impression without greatly reducing the moisture content of the paper itself, such reduction in moisture known to be undesirable in causing the paper to become roughened and weakened as well as varied in length, the latter hindering accurate register of a web. Present invention maintains the moisture content of the web substantially constant throughout the web drying operation by adding aqueous vapor in controlled quantities to the heated drying air. This is accomplished by passing the heated air on its way to the web over an open water-containing receptacle having an inclined bottom so that regulated height of the liquid affects its surface area and consequently the amount of vapor which is picked up by the air. Invented by Albert J. Horton, White Plains, N. Y. Assigned to R. Hoe & Co., Inc., New York, N. Y. Application December 30, 1937. 3 claims.

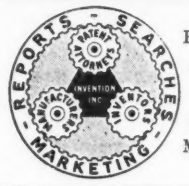
2,307,033. IMPROVED PRINTING MECHANISM for printing a predetermined number of markings in succession as on theatre tickets, and successively changing the marking. The mechanism, attachable to a rotary press suitable for printing theatre tickets, is equipped with type carrying wheels having fifty different markings. The speed of the rotatable type carrying drum is regulated by a Reeves variable speed transmission, by which the number of impressions to be printed during a cycle can be adjusted. The wheels are actuated to change the type exposed for impression only after a considerable run, such as 5,000, of any one predetermined symbol. Invented by Benjamin H. Freedman, Asbury Park, N. J. Unassigned. Application February 29, 1940. 9 claims.

2,307,079. COLLAPSIBLE PLATFORM which is positioned between a sheet feeder and a press and which enables workmen to work on the press and feeder conveniently when the feeder is in inoperative position away from the press. When the feeder moves away from the press, the platform automatically assumes operative position. It folds up or collapses when the feeder moves back toward the press. The platform overlies the means extending between the feeder and press near the floor intermediate the rails upon which the feeder moves. It is preferably disposed as high as the top of the rails. Invented by Joseph Sinkovits, Pittsburgh, Pa. Assigned to Miller Printing Machinery Co., Pittsburgh, Pa. Application August 9, 1941. 20 claims.

2,307,264. PRINTING PLATE CYLINDER with a number of segmental printing surfaces usable selectively, each such printing surface representing a different form to be run while the others are out of action. A suitable mechanism makes it possible to change from one to another of the printing surfaces while the press is in operation and to effect the change automatically after a predetermined number of copies have been run. The printing cylinder, usable in sections, rotates to the next section after a predetermined run as indicated on a tallying mechanism which operates a relay to change the printing surface of the cylinder. It can be used, for instance, for filling in local matter in black or color supplementing what is already printed on the on-coming paper. Invented by Walter E. Hamlin, Cleveland, Ohio. Assigned to The Cleveland Shopping News Co., Cleveland, Ohio. Application November 21, 1939. 5 claims.

2,308,308. SHEET HOLD-DOWN DEVICE for platen presses to prevent edges of onion skin paper, or thin metal sheets, etc., from curling, where such curling interferes with removal of the sheet from a press. The sheet hold-down member comprises a finger which can be advanced to hold the forward edge portion of the sheet, and cam means to retract the finger when the platen is in delivery and impression position. Invented by Charles F. Root, Cleveland, Ohio. Assigned to The Chandler & Price Co., Cleveland, Ohio. Application February 24, 1940. 17 claims.

2,308,815. MECHANICALLY DRIVEN RECIPROCATING PUMP for a centralized lubrication system in connection with printing presses, looms, etc. Invention provides for improved pump unit particularly adapted for feeding lubricating oils under pressures varying from a fraction of a pound to several hundred pounds or more, which may be adjusted to feed any desired number of bearings and can be operated to give continuous high pressure feed to a number of high restriction outlets. Invented by Edward H. Kocher, Boonton, N. J. Assigned to Auto Research Corp., Corporation of Delaware. Application July 3, 1940. 8 claims.



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